Industrial Equipment News

FOUNDED 1933

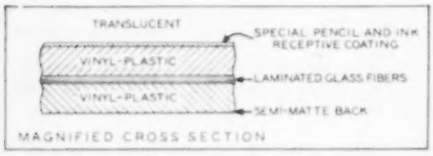
ORIGINAL REPORTER OF *What's New* IN EQUIPMENT, PARTS, MATERIALS

AFFILIATED WITH THOMAS REGISTER OF AMERICAN MANUFACTURERS

If you write maker identify as **IEN - 9446**

DRAFTING . . Translucent plastic sheet is coated for pencil or ink lines

Source: DI-NOC CO.
1702 London Road, Cleveland 12, Ohio



25 sheets in package 8½ by 11 in. about $10

Dinoglass is a new press laminated assembly of two sheets of vinyl plastic with a center of laminated glass fibers for an overall thickness of 0.01 inch. One face is press planished to produce a semi-matte finish. The other side is coated to make it receptive to either pencil or ink. Dimension change due to change in temperature is negligible. Sheet sizes range from 8½ by 11 in. to 50 by 108 inches.

If you write maker identify as **IEN - 9447**

ADHESIVE . . Synthetic resin bonds shell molds for metal pouring

Source: BORDEN CO.
350 Madison Ave., Room 430, New York 17, N. Y.

Modernizing foundry practice

Thor Shell Paste TP-22 is a new adhesive supplied in powdered form to bond the mating faces of the two halves of a shell mold prior to filling molten metal into the mold. This is the metal molding process on which available information was previously described IEN-12358-51.

The resin is mixed just prior to use with an accelerator TA-102 and with water and the company's synthetic material Kordek. The mixture is agitated until it assumes a heavy cream consistency, then is applied to the shell faces at a temperature of 70 to 150 deg. F. Pressure is maintained between two shell halves for 15 to 90 seconds at temperatures not in excess of 210 deg. F. The mold is then ready to be poured.

If you write maker identify as **IEN - 9448**

PURCHASING GUIDE . . Available free to Industrial Equipment News readers

Source: THOMAS PUBLISHING CO.
467 Eighth Ave., New York 1, N. Y.

Last call for free copy

A few copies remain to be alloted from the limited printing of Thomas' Register Jr. They are available in this "last call" to those of you who have not requested your free copy for 1953. We will add your name to our list as long as the supply lasts.

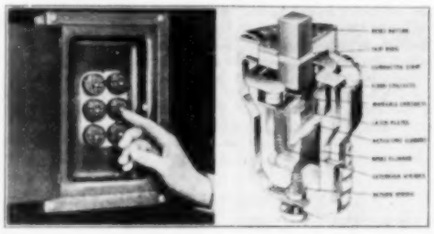
The book is a companion publication to Thomas' Register. It comprises 1,200 pages measuring 6 by 9 inches. It lists names, addresses and ratings of selected manufacturers under some 50,000 product headings.

YOUR HELP IS NEEDED FOR THE COMMUNITY CHEST DRIVE

If you write maker identify as **IEN - 9449**

CIRCUIT BREAKER . . Button reset threads into standard plug fuse base

Source: MECHANICAL PRODUCTS INC.
1822-26 River St., Jackson, Mich.



15, 20, 30 amp. each list at $1.50

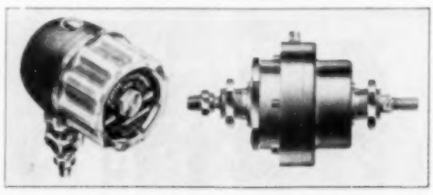
Mini-Breaker trade names a new thermally actuated push button reset circuit breaker designed to take the place of the standard plug fuse rating 15, 20 and 30 amperes. The new unit threads into the plug fuse base. It can be reset by pressing and then releasing the rectangular push button in its face, providing the fault has been corrected that caused the circuit to open. It can be employed as a replacement unit or specified as original equipment.

It meets requirements for tests specified by Underwriters' Laboratories, Inc., for listing as a "circuit breaker-miscellaneous". It has successfully handled 10,000 make and break operations in test service in addition to thousands of overload trips at full 110-volt ac. Trip free action is instantaneous on short or dangerous overload. Time lag prevents opening on temporary starting loads or line surges. The button position indicates tripped circuit by a ring mark. This mark is not visible when the circuit is closed.

If you write maker identify as **IEN - 9450**

CONTROL . . Hydraulic equipment, transmitter operates remote receiver

Source: FARRIS HYDROTORQUE CORP.
550 Commercial Ave., Palisades Park, N. J.



Illustrated details in Bulletin 157

Rotating movement applied by the operator to the knob on the transmitter element of this new Hydrotorque equipment operates a piston inside the transmitter housing. The axial piston movement displaces oil contained in the housing and causes it to flow through a connecting tube to the receiver element. This unit, to the right in the illustration, contains a piston with an elastic seal against which flow is applied.

Axial movement of this piston moves an operating stem extending through the receiver housing for connection to a point of control. This can be a valve, damper, indicator, instrument adjustment located at a point remote from the transmitter. The hydraulic fluid sealed within the two units and the connecting tube will hold a set position at the transmitter and the receiver.

Flow is reversed when the transmitter knob is rotated in reverse direction so the elastic seal action in the receiver will return the piston to starting position. Several sizes in the line provide thrust action maximum at about 400 pounds.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

SEPTEMBER, 1952

VOL. 20 No. 9

What do you need? . . . check this complete subject index for your current product needs. Asterisks (*) after page numbers mean editorial items. Others refer to advertisements.

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- ☐ *Production, Mr.* _____
- ☐ *Engineering, Mr.* _____
- ☐ *Product Design, Mr.* _____
- ☐ *Purchasing, Mr.* _____
- ☐ _____

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If you write maker identify as **IEN-9451**

ELECTRIC CABLE . . Portable, damaging the insulation opens circuit

Source: ANACONDA WIRE & CABLE CO.
25 Broadway, Room 1870, New York 4, N. Y.

Minimizes shock hazard and arcing

Purpose of this new two-conductor electric cable is to cut off power to a portable machine, particularly equipment employed in mines, the instant that damage occurs to the positive-conductor insulation. The cable is employed with a ground trip relay which, when energized, opens the circuit. It is particularly suited for use with shuttle cars and other mobile mining machines as well as portable industrial equipment involving heavy duty service for the power supply cable.

Construction includes a semi-conducting tape applied over the insulation of the black conductor and around the grounding conductor enclosing the breaker strip. This shielded conductor is then assembled in the same manner as a standard parallel mining machine cable. Electric arc resulting from injury to the insulation immediately reaches the semi-conducting tape and through it the grounding conductor to actuate the circuit opening relay. The cable meets requirements of the Federal Mine Safety Code Schedule 2E of the U. S. Bureau of Mines and Act 208 of Pennsylvania.

If you write maker identify as **IEN-9452**

MARKING . . Collapsible tube and ball point tip is filled with ink

Source: JOHN P. NISSEN JR. CO.
2542-46 Fairhill Ave., Glenside, Pa.

Indelible ink that will withstand wear, weathering and washing and will not bleach out is contained in this new ball point equipped flexible tube. The ink feeds through the point when the tube is employed as a pencil. It is particularly suited for marking on fabrics as well as on smooth surfaces. Various ball point attachments are available. The tube will not burst in service.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN-9453**

For Lifting and Holding Heaviest Loads

DUFF-NORTON
Ratchet Lowering
JACKS

for **INDUSTRIAL PLANTS • MILLS • MINES • RAILROADS • CONTRACTORS RIGGERS • TRUCKERS • ETC.**

Constructed for long, trouble-free service—smooth action—Duff-Norton Ratchet Lowering Jacks raise loads weighing from 5 to 25 tons from 7½" to 18". Built for rugged use. Many sizes to choose from.

Write for Catalog 203G.

THE DUFF-NORTON MANUFACTURING CO.
Main Plant and General Offices: PITTSBURGH 30, PA.—Canadian Plant: TORONTO 6, ONT.
"The House that Jacks Built"

If you write maker identify as **IEN-9454**

KEEP YOUR EYE ON THE BALL BE SURE OF YOUR BEARINGS

You'll be sure of *top quality* in ball bearings . . . *top service* in ball bearing application . . . if you keep your eye on New Departure. The world's most popular ball bearings, New Departures reduce costs as surely as they reduce friction, and do so in a wide variety of installations. New Departure engineers will gladly consult with you on your ball bearing application problems.

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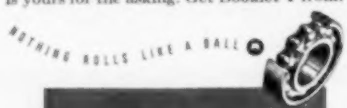

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NEW DEPARTURE • DIVISION OF GENERAL MOTORS • BRISTOL, CONN.

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Improved trigger action gives you extra speed, extra safety. Kidde Carbon Dioxide portables act as fast as you can think and pull the trigger. Write for free literature.

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Walter Kidde & Company, Inc.
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Gives full details about low-temperature silver alloy brazing with EASY-FLO and SIL-FOS—plus valuable information on joint design and fast heating and brazing production.

BULLETIN 17
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TORCH BRAZING INSTRUCTIONS
Tells how to prepare parts for torch brazing with EASY-FLO and SIL-FOS and how to use gas torches for proper heating and flowing the alloys.

TECHNICAL BULLETINS
Contain the results of research into all phases of silver alloy brazing. Write and ask us to put your name on the Technical Bulletin mailing list.

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Covers the quick, low-cost way to make broken broaches, drills, taps, band saws and cutting tools of all kinds, good as new with EASY-FLO.

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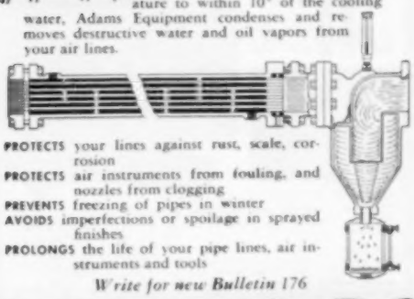
● Reducing compressed air temperature to within 10° of the cooling water, Adams Equipment condenses and removes destructive water and oil vapors from your air lines.



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PREVENTS freezing of pipes in winter
AVOIDS imperfections or spoilage in sprayed finishes
PROLONGS the life of your pipe lines, air instruments and tools

Write for new Bulletin 176

R. P. ADAMS CO., INC. 219 S. PARK DRIVE BUFFALO 17, N. Y.

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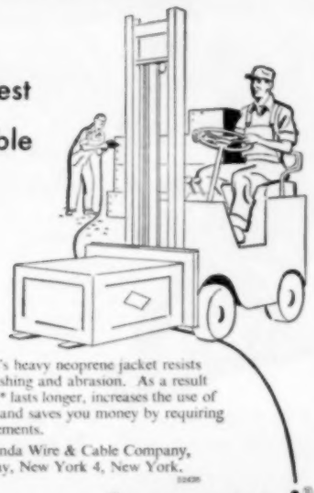
SECURITYFLEX

the toughest portable cord



Securityflex's heavy neoprene jacket resists water, oil, crushing and abrasion. As a result —Securityflex* lasts longer, increases the use of fine tools and saves you money by requiring fewer replacements.

Anaconda Wire & Cable Company, 25 Broadway, New York 4, New York.

the right cable for the job **ANACONDA® WIRE AND CABLE**

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First Again!

BROWNING SHEAVES with "UNBREAKABLE" MALLEABLE IRON

SPLIT TAPER BUSHINGS

WRITE FOR THE NAME OF THE BROWNING DISTRIBUTOR NEAR YOU

BROWNING MANUFACTURING COMPANY MAYSVILLE KENTUCKY, U. S. A.

If you write maker identify as IEN - 9460

GAGE . . Spirit level unit reads to 0.00001 in. per in. of length

Source: F. T. GRISWOLD MFG. CO. 303-7 W. Lancaster Ave., Wayne 5, Pa.

Reads deviation quickly

Optical Level is a new spirit level gage in which three bubble vials and two prisms are arranged for observation through one of the three vials. Half images of opposite ends of two air bubbles will show in the observation vial. True horizontal will have been established when the images form a perfect semi-circle. Separate images indicate deviation from horizontal with "rise" to the left and "fall" to the right.

The gage measures 7 in. in length and includes a micrometer thimble dial with which readings are taken as the unit is moved along a work surface in 7-in. increments. Applications include flatness checking of surface plates and machinery beds, straightness of cylindrical rolls, parallelism of V-ways or flats.

If you write maker identify as IEN - 9461

LUBRICATING . . Wax base coolant minimizes heat in machining operations

Source: S. C. JOHNSON & SON INC. 1523-27 Howe St., Racine, Wis.

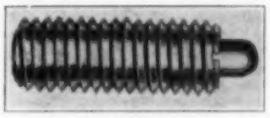
"No smoking" at machines

Wax-Cut is a new wax-base cutting oil, golden clear in color, for use in automatic screw machines, gear cutting machines, broaches, lathes, drilling machines where oil type cutting fluids are employed. The new fluid will not stain nonferrous metals or damage machine bearings or mechanisms. Its clear color enables the operator to observe progress of the work through it. It has no odor, will not turn rancid and keeps temperature at the machining operation below the point at which burning can occur.

If you write maker identify as IEN - 9462

CLAMP . . Spring plunger serves as clamp, locator, ejector

Source: VLIER MFG. CO. 4550-54 Beverly Blvd., Los Angeles 4, Calif.



For built-in use

Silvertip is new design in the company's line of spring backed plungers previously described IEN-1118-45. The new units range from ½ to 2¼ in. in length with spring pressure from 1 to 6 pounds. This pressure is lighter than that provided in the original units. Bright finish cadmium plating is employed on the plunger end to distinguish it from the standard design. The plunger end is rust resistant and case hardened. It telescopes into the body.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9463

SAFETY EQUIPMENT FOR ALL INDUSTRIES

SAFE STORAGE FOR EXCELSIOR AND OTHER INFLAMMABLE MATERIALS

Meet all fire regulations of Insurance Companies, State and Municipal authorities.

IPCO SAFETY STORAGE BINS

For shipping and receiving rooms and other plant areas where excelsior, paper, rags, paint and other combustibles are used. Sturdily manufactured of heavy gauge galvanized iron with reinforced angle corners. Fitted with fusible link so cover is allowed to close automatically in case of fire.

WRITE FOR BULLETIN NO. 63

IPCO *Safety Equipment for all Industries*

INDUSTRIAL PRODUCTS COMPANY

2801 N. FOURTH STREET • PHILADELPHIA 33, PA.

If you write maker identify as IEN - 9464

LUBRICATION ECONOMY

"THIS LUBRICANT reduces Service Calls!"

The sales director of the Lynch Corporation, manufacturers of the MORPAC forming and wrapping machine, writes us, *"Our Service Engineers can readily spot machines that have had other than LUBRIPLATE Lubrication, as these machines do not give the service they should."*

1. LUBRIPLATE reduces friction and wear
2. LUBRIPLATE prevents rust and corrosion
3. LUBRIPLATE is economical to use

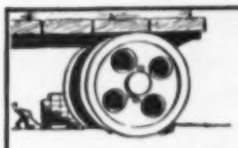
Write today for case histories of savings made through the use of LUBRIPLATE in your industry.

LUBRIPLATE DIVISION Finke Brothers Refining Co. Newark 5, N. J. Toledo 5, Ohio

The Different LUBRICANT!

DEALERS EVERYWHERE, consult your Classified Telephone Book

If you write maker identify as IEN - 9465



IN A Rut?

DON'T LET WORN FLOORS SLOW UP PRODUCTION!

A *real* heavy-duty floor must be concrete—*good* concrete. 'Incor' 24-Hour Cement assures stronger, longer-lasting, heavy-duty concrete floors—by curing THOROUGHLY in 24 hours, instead of a week or more.

Don't let worn-out floors slow production—rebuild floors over a week-end with 'Incor'*—no plant tie-up—no time-loss!

Write for booklet, "Heavy-Duty Floors"—address Lone Star Cement Corporation, 100 Park Avenue, New York 17.

*Reg. U.S. Pat. Off

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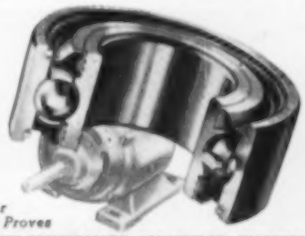
Offices: Abilene, Tex. • Albany, N. Y. • Bethlehem, Pa. • Birmingham • Boston Chicago • Dallas • Houston • Indianapolis • Kansas City, Mo. • New Orleans New York • Norfolk • Philadelphia • Richmond • St. Louis • Washington, D. C.

If you write maker identify as IEN - 9466



Survey by Leading Motor Manufacturer Proves

NORMA-HOFFMANN *PRELUBRICATED* "CARTRIDGE" BEARINGS

Slash Motor UPKEEP COSTS

A recent survey of over 131,626 A-C motors shows the use of "Cartridge" Prelubricated bearings saved a yearly average cost of $270.00 per hundred motors by eliminating periodic relubrication.

In addition to this $270.00 saving, motors using "Cartridge" bearings showed an indicated saving of $480.00 by reducing motor outage, lost machine time and man-hours.

A total yearly saving of $750.00 per hundred motors! You, as a manufacturer of motors, machine tools, pumps or other machinery can pass these savings to your customers by using Norma-Hoffmann "Cartridge" Ball Bearings. How — because these patented bearings require no periodic relubrication.

Made to double-row width, Norma-Hoffmann "Cartridge" single-row ball bearings have 100% more grease capacity than conventional width sealed bearings. The highly efficient seals keep dirt out, grease in. Factory-packed with Norma-Hoffmann's specially compounded "stability-tested" grease...grease that is highly resistant to oxidation and break-down...assures dependable operation for long periods without regreasing.

Use Norma-Hoffmann "Cartridge" Ball Bearings in your products. Our engineers are always available for consultation on your bearing applications. Write for their services.

NORMA-HOFFMANN *Precision* BEARINGS BALL • ROLLER • THRUST

NORMA-HOFFMANN BEARINGS CORPORATION • STAMFORD, CONN.
FIELD OFFICES: Atlanta, Birmingham, Charlotte, Chicago, Cincinnati, Cleveland, Dallas, Detroit, Jacksonville, Kansas City, Los Angeles, San Francisco, Seattle

If you write maker identify as IEN-9467

Moly-sulfide

A LITTLE DOES A LOT

shows up best where the frictional conditions are difficult

The case-histories of 154 difficult friction problems in the shop and in the field, all successfully solved, are described in a new 40 page booklet. It is where conditions are extreme that *Moly-sulfide* excels over other lubricants. If you encounter extreme conditions of pressure, temperature or velocity, send for this free booklet.

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Vol. 20 SEPTEMBER, 1952 No. 9

Our Dictating Machine

Some types of equipment wear out in service and call for normal replacement at relatively frequent intervals. Certain portable tools, product and material handling facilities, typewriters, wrenches are fair examples. This is good for you and for the equipment maker also. It gives you the opportunity to make a clean discard of old equipment. It gives the equipment maker a ready market for his new designs into which he has built performance that may far outshine his best previous model.

Of course some equipment users do not recognize the opportunity and allow themselves to be drawn into the repair parts pitfall to the point where their parts inventory is too great to permit discard. We have seen equipment in service in which there is no single original part. We know equipment manufacturers who shudder when they open orders received from otherwise good customers for fear these orders will include repair items for equipment long since out of their regular lines.

Fortunately these who hoard old equipment of these types are in the minority. The problem is with the equipment maker rather than the user. It is one of maker competition to keep ahead with the best in materials and design and construction and operation and price.

Then there is a second type of equipment. It seems never to wear out to the final point where it will run no longer and must be replaced. Examples are major production machinery, service equipment, compressors, engines, motors, cranes, elevators, pumps, even our old dictating machine.

This is not good for either you or the equipment maker. There is no breakdown crisis to require you to dent the company pocketbook. As long as the old equipment continues to perform you feel no particular urge to compare it seriously with the latest design. So you just do the best you can with what you have and build any improvements in procedure around it instead of looking for something new to start with.

This is what we have been doing, until six months ago, with the wax cylinder dictating machine we purchased in 1936. The service man has kept it running. We have cut words into thousands of cylinders and made enough dust with it and the shaving machine to cover the entire office a quarter inch thick if the cleaning woman had let it lie.

We have dictated descriptions into it of the new dictating machines and little Margaret Welsh, our transcribing expert, has put the words on paper without either of us giving more than passing thought of new equipment for ourselves. Then our purchasing agent suggested we try a new electronic machine.

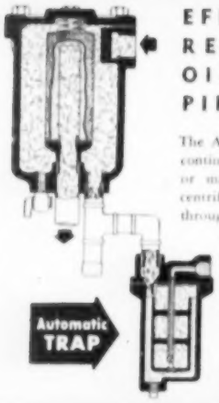
It was difficult to believe so much difference could exist, that the new machine could outclass the old one so completely. We will not go into details because you should have the demonstration in your own office. We do want to suggest this one example, however, for action you can take on a hundred subjects.

List your oldest equipment for which you have no new counterpart. Ask your own purchasing agent to bring in representatives from the new equipment makers. Make your comparisons point by point. Let us know if we can help with source information.

W. E. Irish

If you write maker identify as IEN-9468

Poro-Stone Filtration FOR COMPRESSED AIR



EFFICIENTLY REMOVES OIL, WATER PIPE SCALE

The Adams *Poro-Stone Filter* gives continuous service without attention or maintenance expense. Efficient centrifugal separation *plus* diffusion through Poro-Stone, removes contamination completely without pressure loss. Automatic Trap eliminates attention and assures continuous and efficient filter operation.

Write for complete data Bulletin 176

R. P. ADAMS CO., Inc.
219 E. Park Dr., Buffalo 17, N. Y.

ADAMS *Poro-Stone* AIR FILTER

If you write maker identify as IEN-9469

don't let dirt damage your piping!

CRANE SEDIMENT SEPARATORS COST SO LITTLE

Iron Body and Cast Steel
•
Working Pressures
Up to 600 pounds steam. Iron patterns in sizes up to 12-in. Steel patterns to 1½-in. Screwed or Flanged Ends.

Why take chances with valuable and sensitive flow control equipment? Put Crane Sediment Separators in your pipe lines and be sure dirt, grit and scale can't do damage.

Simple in design; rugged in construction. Have extra large screening area assuring free fluid flow with minimum pressure loss. Effectively trap all foreign matter. Periodic blowing out is only maintenance required. Get full details from your Crane Catalog or call your Crane Representative.

CRANE CO., 836 S. Michigan Avenue, Chicago 5, Ill.
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CRANE *Everything for Every Piping System*

VALVES • FITTINGS • PIPE • PLUMBING AND HEATING

If you write maker identify as IEN-9470

LOW COST, ORGANIZED STORAGE SPACE

32-DRAWER (96 COMPARTMENTS) Metal Storage Units

CRYSTAL CLEAR OR MATCHING GRAY PLASTIC DRAWERS

MODEL J-32
$11.95
F.O.B. AKRON
15⅛" high
6" deep
12½" wide

HUNDREDS OF USES:

Useful in every shop, lab, office, stockroom, store, home, assembly line . . . in radio, TV, photographic and ignition work.

Orderly storage for small parts, bolts, nuts, drills, lamps, carbide tips, buttons, thread, paper clips, labels, pins, rubber bands, stamps, films, photo supplies, negatives, fishing tackle, artist supplies, medical supplies, marine supplies, drugs, jewelry, etc. Safety catch ends accidental spilling, identity card drops into slot in drawer front.

Made in 7 sizes

J-64	64 drawers	192 compartments	$22.95
J-48	48 drawers	144 compartments	18.75
J-32	32 drawers	96 compartments	11.95
J-24	24 drawers	72 compartments	9.95
J-16	16 drawers	48 compartments	6.95
J-12	12 drawers	36 compartments	5.25
J-8	8 drawers	24 compartments	3.95
AK-8	Adapter Kit for Existing 8 Drawers LENGTHWISE (Dividers FREE with each cabinet)		3.0

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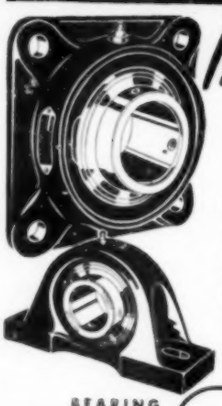
AKRO MILS, INC. P.O. BOX 989 AKRON 9, OHIO

If you write maker identify as IEN-9471

• Flange Units
• Pillow Blocks
• Take-Up Units

SEALMASTER BALL BEARING UNITS



Improve Any Bearing Application

Replace worn bearings with SealMasters. They give lasting service and economy. Only SealMaster bearings combine the features essential to smooth operation, long life, easy installation and top performance in quiet power transmission.

Write for Catalog 845

BEARING DIVISION
STEPHENS-ADAMSON MFG. CO.

Tellevel—Bin Level Controls · Car Loaders · SealMaster Ball Bearings · Car Pullers · Winches · Sacs Speed Reducers

24 RIDGEWAY AVE., AURORA, ILLINOIS

If you write maker identify as IEN-9472

Here's the METAL...

Pattern S-WL Perforated

..that Keeps BRUSH TAPE RECORDERS from getting SORE THROATS

Favorite targets for pencils, fingers and sharp objects are the speaker grilles of tape recorders, radios and "mike boxes". The Brush Development Company in Cleveland uses speaker grilles of perforated RIGID-TEX METAL to minimize damage, protect delicate inner parts, assure excellent tone transmission, and add to the product value of their Brush Tape Recorder. The perforated metal pattern keeps it in "better voice" . . . protects it from punctures, scratches and dents.

Why not specify utility-packed, designed-strengthened RIGID-TEX Metals in your product?

Write on your company letterhead for RIGID-TEX METALS Fabrication Hints Folder and the name of your nearest RIGID-TEX METALS warehouse distributor.

U. S. and Foreign Patents

Rigidized Metals Corporation

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If you write maker identify as IEN - 9473

FLEXIBLE COUPLINGS

Soundly engineered, LOVEJOY Flexible Couplings provide maximum alignment correction for smooth power transmission. Vibration, starting torque and shock of intermittent loads are dampened and absorbed. Operational efficiency and economy is increased, motor and machine protected — their service life lengthened. The end result is not only a more profitable, but an improved finished product.

There is a LOVEJOY Flexible Coupling for every requirement. Cushions are made of materials best suited to the load conditions.

Write today for Catalog and Handy Selector Charts

LOVEJOY FLEXIBLE COUPLING CO.
5014 W. LAKE STREET CHICAGO 44, ILLINOIS
Also Mfrs. of Lovejoy Universal Joints and Variable Speed Transmissions

If you write maker identify as IEN - 9474

One man, with an S-A Box Car Loader, can make quick work of loading and trimming a box car. The loader operates without attention after it is placed in the car, and flow of material is started. This handy machine automatically loads and trims in a fraction of the time required by hand methods. Exposure of operator to dust is reduced to the minimum. Save time and manpower with this standard S-A portable loader . . . It handles loose granular material up to 2-inch lump size.

Write for Bulletin No. 948 and full details.

STEPHEN S-ADAMSON MFG. CO.

TELLEVEL—Bin Level Controls · Car Loaders · Variable Speed Reducers · Car Pullers · SealMaster Ball Bearings · Winches · Saco Speed Reducers

RIDGEWAY AVE., AURORA, ILLINOIS

If you write maker identify as IEN - 9475

Listen to Harold Baxter, Vice-President of A. Carlisle & Co., one of San Francisco's largest printing concerns:

"Mastipave is so satisfactory we are planning to install it in other work areas. Our employees stand most of the time—really appreciate this floor covering. It's comfortable underfoot—has actually reduced the accident hazard from slips and falls. Employee efficiency is so important we couldn't do without Mastipave today. Under rough treatment, including light trucking, Mastipave has stood up well—low in cost—easy to maintain."

PABCO MASTIPAVE *in roll goods and tiles*

GRIP-TREAD *in roll goods only*

. . . Proved, for over 28 years—in schools, industries, hospitals, public buildings.
. . . Costs little, looks good, wears long.
. . . Worth investigating, for YOUR toughest job!

SEND NOW FOR THE FULL STORY OF MASTIPAVE

PABCO PRODUCTS INC.
New York 16 • Chicago 54 • San Francisco 19
(Mail to Dept. E, nearest office)

GENTLEMEN: Without cost or obligation to me, please send folder, "Every Building Needs Pabco Mastipave."

NAME _____
ADDRESS _____
CITY _____ STATE _____

If you write maker identify as IEN - 9476

GAGE . . Dial reads tension and actuates electric limit circuit

Source: W. C. DILLON & CO.
1419-23 S. Circle Ave., Forest Park, Ill.

Indicates, signals, protects

Model EL is new design in the company's line of Traction Dynamometers, previously described IEN-2845-50. The new unit includes a switch and binding post to connect into an electric circuit. The switch contacts are closed or opened when the pointer that normally travels on the dial makes contact with a third adjustable pointer carrying the opposite side of the switch circuit. This pointer can be positioned over the dial by turning a knurled knob on the face.

Thirteen capacities are minimum at 0 to 500 lb. and maximum at 0 to 100,000 pounds. The smallest unit weighs 8½ lb. and is normally supplied with a 5-in. dial. A 10-in. dial can be specified. Both are protected by safety glass.

The load connects through shackles and attachment pins on the sides of the housing. The mechanism includes a calibrated steel beam and magnifier connecting to the pointer to read deflection in terms of pull or weight. All parts are protected against corrosion so application can be made indoors or outside on machines, material handling equipment and for various types of static load testing.

If you write maker identify as IEN - 9477

TACHOMETER . . Electronic design for rotating speeds to 50,000 rpm.

Source: MICRO BALANCING INC.
Herricks & Washington, Garden City Park, N. Y.

Accurate for high speeds

Actuation for this new electronic tachometer is by means of a variable reluctance pick-up which is mounted close to the surface of a rotating element on which a small flat has been cut or a slug attached. Either one alters the reluctance to induce a signal in the pick-up that is transmitted electrically to the amplifier forming the second unit in the three-part assembly. It measures 4 by 5 by 6 inches. Its output is employed to operate a milliameter which is the third unit in the assembly.

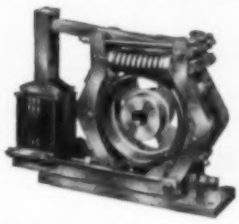
The meter is calibrated to read across the required rpm. range. Indicating lights, relays or other signaling devices can be employed in its place. A photocell can be used as the signal source in connection with a distinctive mark on the rotating element. Operation is on 110-volt 400-cycle ac. but can be specified for 60-cycle ac. Also the meter can be specified in unit assembly with the amplifier housing.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59

If you write maker identify as IEN - 9478

TROMBETTA SOLENOID CORP.

331 N. MILWAUKEE ST. • MILWAUKEE 2, WIS.



SB-373 SHOE BRAKE
10" WHEEL, 5" Face, 450 FT.-LBS.

SB-300 LINE OF BRAKES
TORQUE CAPACITY 3 to 24,000 FT.-LBS.

AVAILABLE IN SPRING SET OR MAGNETICALLY SET WITH OIL IMMERSED AND EXPLOSION PROOF SOLENOIDS

EIGHT LINES OF SOLENOIDS, RECIPROMOTORS AND SEMOTORS

If you write maker identify as IEN - 9479

Chromalox Electric Radiant Panels generate uniformly absorbed far-infrared heat for baking, drying, curing and other uses. Temperatures up to 700° F. are easily selected and accurately held with "dialed" controls.

THESE ADVANTAGES—AND MORE!

- Longer Wave Length—absorbed equally fast by all colors.
- High Intensity Radiation—more watts per square foot.
- Infinitely Variable Output—from 0% to 100% of capacity.
- Shatter-proof Construction—nothing to break or contaminate work.

GET THIS BULLETIN — It shows you how Chromalox Radiant Panels can save you time, money, work.

OVEN BUILDING SIMPLE AS A-B-C
1" x 4" and 2" x 4" pre-engineered panels quickly assemble into ovens.

Industrial Radiant Heating Division
EDWIN L. WIEGAND CO., 7505 THOMAS BOULEVARD, PITTSBURGH 8, PA.
See Chromalox Electric Heaters Advertisement, Page 11

CHROMALOX
ELECTRIC HEAT FOR MODERN INDUSTRY

If you write maker identify as IEN - 9480

FAST . . . POSITIVE IDENTIFICATION

For a few cents per pipe, you can equip your entire plant with Brady QUIK-LABEL Pipe Markers. You can get a uniform system of pipe identification based on A.S.A. Standard A13. Names of materials printed in large black letters on correct A.S.A. background colors — no hand stenciling, painting, or hard to remember codes. Anyone who can read can tell at a glance the pipe contents and direction of flow. Over 235 different markers and direction arrows in stock. Specials made to order.

Brady QUIK-LABELS stick without moistening—applied in a jiffy, Silicone Plastic treated to resist dirt, grime, moisture—for indoor or outdoor service.

Brady Pipe Markers leave no room for doubt . . . or TRAGEDY.

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MANUFACTURERS OF SELF STICKING PRODUCTS
W. H. BRADY COMPANY
1621 E. SPRING STREET • CHIPPEWA FALLS, WIS.

If you write maker identify as IEN - 9481

For VOLTAGE CONTROL of Small Alternating-Current Machines

ALLIS-CHALMERS Generator Voltage Regulators control voltage by automatically changing resistance in the exciter shunt field circuit. Only a small rocking movement of the contact sector over the curved commutator is required to cover the entire regulating range. Response is fast and accurate . . . sliding friction eliminated and wear minimized.

The V-00 regulator is used on ac generators with direct-connected exciters to 157 kva at 3600 rpm. Type 221 is used on ac machines with direct-connected exciters to 438 kva at 3600 rpm. These regulators can be modified for temperature compensation, shock mounting, or other special requirements.

Ask your A-C representative, or write Allis-Chalmers, Milwaukee 1, Wisconsin, for Bulletin 14B6145A. A-3621

Rocking Contact is an Allis-Chalmers trademark.

ALLIS-CHALMERS

If you write maker identify as **IEN - 9482**

METZGAR GRAVITY WHEEL & ROLLER CONVEYORS

GRAVITY POWER *Costs Nothing*

Saves up to 70% time in loading, unloading, warehouse handling and production line flow of work at no cost for power. Portable or permanent installation. Lubricated for life. Ball Bearing throughout.

Standard 11½", 15", 18" widths ... 5', 10' lengths. Curves 5', 8', 12', or to order. Strong ribbed rails.

Ask for Folder No. 1251

METZGAR CO. METZGAR

MFGRS. OF WHEEL & ROLLER GRAVITY & LIVE ROLLER CONVEYORS • POWER BELT CONVEYORS • SWITCHES • ACCESSORIES • REEL DOLLIES & END-WOOD WHEELS.

417 Douglas, N. W.

GRAND RAPIDS 4, MICH.

If you write maker identify as **IEN - 9483**

Continuous One Man Operation With AMERICAN MONORAIL

Here's an operation that must be on the go, all the time and fast, and yet, one man plus an American MonoRail Crane keeps the line flowing smoothly and fast. Fast operating, constant service, American MonoRail Cranes are ruggedly built to handle loads up to 10 tons at operating speeds of 500 feet per minute. Articulated trolleys assure perfect alignment of trucks for smooth crane travel.

Let an American MonoRail engineer explain all the advantages of these constant service cranes.

THE AMERICAN MONORAIL COMPANY

13111 Athens Avenue • Cleveland 7, Ohio

If you write maker identify as **IEN - 9484**

ALL INFORMATION, METHODS, AND IDEAS NEEDED TO PRODUCE *BETTER TOOLS AND DIES*

Practical Data on Popular Analyses of Tool Steels, their Selection, Heat Treatment, and Use

in the Revised, Enlarged SIXTEENTH PRINTING of this

TOOL and DIE STEEL HANDBOOK

By Palmer and Luerssen

Here's the BOOK OF ANSWERS for every man responsible for tools and dies. Shows you how to increase your company's production from present equipment—how to reduce toolmaking trial and error, conserve tool steel, avoid die troubles, simplify heat treatment. Gives complete working information on everything from selection of the right steel to heat treating methods and equipment, hardness and toughness testing, latest data on high speed and hot work steels. 564 pages, 355 charts, photos, diagrams give you facts on: how design affects heat treatment, hardenability tests, time required to heat different tools to required hardening and drawing temperatures, furnace atmospheres, quenching, tempering, trouble-shooting.

INCLUDING 80-PAGE ALPHABETICAL SELECTOR BOUND RIGHT IN THE BOOK SHOWING WHICH STEEL TO USE FOR ALMOST EVERY TOOL AND DIE. Use this book to train new men and upgrade skilled men.

OVER 100,000 COPIES IN USE! CLIP AND MAIL NOW

THE CARPENTER STEEL CO. • READING, PA. • DEPT. BX-2

Please send me, postpaid, your revised "Tool Steel Simplified". I enclose $2.00 ($2.50 outside U.S.A.) in full payment of the book.

NAME ______ TITLE ______

FIRM NAME ______

MAILING ADDRESS ______

CITY ______ STATE ______

(Please print)

If you write maker identify as **IEN - 9485**

DRILLING . . Motor driven head, air hydraulic feed, to ¾ in. in steel

Source: DELTA POWER TOOL DIV., ROCKWELL MFG. CO. 624-G N. Lexington Ave., Pittsburgh 21, Pa.

Valve varies feed

Stroke is maximum at 6 in. for this new Model 19-600 drill head. It is a further development of the similar head previously described IEN-13951-51, in that case capacity was to $\frac{5}{16}$ in. and maximum drill depth to 1½ in.

The new head operates at a spindle speed between 28 and 3,450 rpm. It employs shop air pressure at about 80 lb. for forward movement with rapid traverse and feed control by hydraulic means built into the head. Feed adjustment is maximum at 180 rpm. based on 80 lb. air pressure. Rapid traverse is maximum at 300 ipm. on the same air pressure.

The spindle can be direct connected to the motor for the rotating drive or through a gear train or by V-belt. The head can be mounted in any position required.

If you write maker identify as **IEN - 9486**

RUBBER . . Imported sheet for wear and corrosion proofing

Source: LINATEX CORP. 852 Vernon Ave., Rockville, Conn.

Natural rubber from Malaya

Linatex trade names a sheet material made of a special form of natural rubber now being imported from Malaya. The sheet is available in standard 4 by 50-ft. dimensions and in thickness ranging from 1/32 to ½ inch. It can be secured to the surface of a metal or non-metallic material by air curing cements. Permanent adhesion can be obtained on metal, wood, concrete, Fiberglas and on other rubber surfaces.

Typical applications are in surfacing and repair of conveyor belting and pulleys, wear proofing for ore skips, corrosion proofing for tanks holding acids and for fan blades employed in corrosive atmospheres. Pipes and valves lined with the material are highly wear resistant. Service life can be increased for any equipment subject to impact and abrasion.

If you write maker identify as **IEN - 9487**

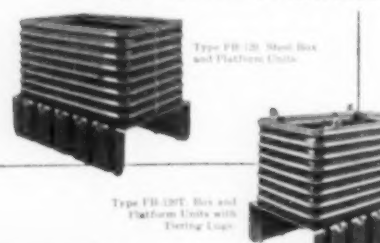
GRINDING . . Wheel type dresser cuts glazing from an abrasive belt

Source: DESMOND-STEPHAN MFG. CO. 315-19 S. Walnut St., Urbana, Ohio

Beltbrasive is a new wheel type hand held dresser designed for application across the face of an abrasive belt to remove glazing and loading. It cleans the abrasive surface for fast stock removal. Tests show it can prolong belt life in normal duty.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 9488**



Type FB-120 Steel Box and Platform Units

Type FB-120T Box and Platform Units with Tiering Lugs

ABILITY to carry the load

Type FB-130 Removable Box Units Equipped with Corner Stacking Brackets

Truscon Steel Box and Skid Platform units in various sizes to fit individual requirements are fabricated from heavy gage steel sheets of uniform thickness, into which deep reinforcing ribs are pressed to produce maximum strength and rigidity. The skid platforms of these units can be equipped to meet specific requirements of any industry. They can be used for any type of commodity, with hand or power lift trucks or cranes. Write for illustrated literature describing the line of Truscon Steel Boxes and Skids available.

TRUSCON STEEL COMPANY • Pressed Steel Division

6200 Truscon Avenue, Cleveland 4, Ohio • Subsidiary of Republic Steel Corp.

If you write maker identify as **IEN - 9489**

with

di-acro PRECISION MACHINES

Eliminate dies ... speed production ... in both your experimental and quantity run duplicating operations. An unusually wide variety of both simple and intricate parts can be precision made by "Die-Less Duplicating" with the individual or co-operative application of Di-Acro Precision Machines (see examples at right). Di-Acro Machines are now offered in a total of seven types and 36 different sizes, including two new units—a power driven Notcher and a power Punch.

SEND FOR 40 PAGE CATALOG

ENGINEERS—DESIGNERS—PRODUCTION MEN should all have this informative catalog which contains technical data covering Di-Acro Machines and our offer of "Die-Less Duplicating" Engineering Service to aid in solving design and production problems... WRITE FOR YOUR COPY TODAY.

O'NEIL-IRWIN MFG. CO.

318 8th Avenue, LAKE CITY, MINN.

If you write maker identify as **IEN - 9490**

SYNTHETIC SAPPHIRE *for*

Resistance to Wear

Outlasting hardened steel and cemented carbides up to 5,000 times.

Resistance to Friction

Affording very low friction characteristics due to hardness and surface continuity.

Resistance to Heat Distortion

Retention of form at temperatures up to 1,000° C.

Retention of Insulating Properties

Excellent dielectric properties over a wide range of temperatures.

Synthetic Sapphire can be polished by flame or diamond polishing; it can be formed and bent by flame. Polished sapphire surfaces keep free of dirt, lint, and in many anti-friction applications, need not be lubricated.

Call or write the LINDE office nearest you for a copy of the booklet, "LINDE Synthetic Crystals For Industry". Ask for Form 7560.

LINDE AIR PRODUCTS COMPANY

A DIVISION OF UNION CARBIDE AND CARBON CORPORATION

30 East 42nd St., New York 17, N. Y. UCC Offices in Other Principal Cities

In Canada: DOMINION OXYGEN COMPANY, LIMITED, Toronto

If you write maker identify as **IEN - 9491**

small size

Yarway Impulse Steam Trap is hardly larger than a pipe union. Easily installed *anywhere*. ½" trap weighs 1¼ lbs.; 2" trap only 8½ lbs. Over 650,000 Yarway traps have been *proved on the job*. Sold by over 200 distributors. For name of nearest one, or free bulletin, write . . .

YARNALL-WARING CO., 122 Mermaid Ave., Phila. 18, Pa.

YARWAY IMPULSE STEAM TRAP

If you write maker identify as IEN-9492

SAVE 3 WAYS

WITH STAYNEW HYDRAULIC FILTERS ON YOUR EQUIPMENT

MODEL HE Hydraulic Filter

1. SAVE WEAR ON COSTLY EQUIPMENT
2. SAVE SPOILAGE AND REJECTS AT POINT OF USE
3. SAVE MAN HOURS WASTED IN EQUIPMENT REPAIRS AND MAINTENANCE

For top performance and economical operation, specify Staynew Filters as original equipment on your hydraulically operated machinery. All types of metallic mesh and fabric media are available.

Our Engineering Department will welcome the opportunity of recommending the type of Staynew Filter best suited for your specific need. Write today for Bulletin HF-2.

Representatives in Principal Cities

DOLLINGER STAYNEW FILTERS

DOLLINGER CORPORATION
3 Centre Pk., Rochester 3, N. Y.

ALL TYPES OF FILTERS FOR EVERY INDUSTRIAL NEED

If you write maker identify as IEN-9493

New Safety! New Efficiency!

for ANY PULLING . . . PUSHING . . . LIFTING JOB

with the right SIMPLEX HYDRAULIC EQUIPMENT

Re-Mo-Trol PULLERS

Hydraulic Pumps and remote-controlled Rams for pulling wheels, gears, shafts, etc.; also pushing and lifting in any direction *from a distance*. Safe, smooth, powerful. 10 to 100 ton capacity units. Unique Center-Hole simplifies rigging.

SIMPLEX JENNY

Self-contained Hydraulic Pullers with famous Center-Hole for easy pulling, pushing, lifting. Rugged, versatile. 6 models, 30 to 100 ton capacities.

SIMPLEX HYDRAULIC JACKS

Sturdy, safe, efficient units to do any lifting job easy and fast. 8 models; 3 to 100 ton capacities. Also 15 and 25 ton models with toe lifts.

Get full information on the most complete industrial line of Hydraulic Jacking equipment; write for Bulletin: Hydraulic 51R.

Simplex LEVER · SCREW · HYDRAULIC Jacks

TEMPLETON, KENLY & CO.
1012 S. Central Ave., Chicago 44, Ill.

If you write maker identify as IEN-9494

Mecco SAFETY INSPECTORS' HAMMERS

WITH INTERCHANGEABLE INSERTS

5 HAMMER END STYLES

Regular Testing · Ball End · Medium Testing · Blunt Point · Prick Point

Ideal for inspection or piece work identification, etc., Safety Inspectors' Hammers are available in five standard sizes—½#, ¾#, 1#, 1½# and 2#. Steel inserts for any identification or inspection purposes are furnished with any desired letter, figure, symbol or design.

Write for complete data TODAY

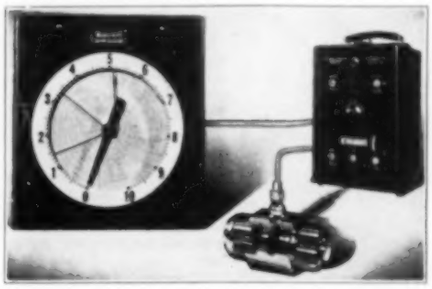
M. E. CUNNINGHAM CO.
SAFETY STEEL STAMPS

1039 Chateau Street • Pittsburgh 33, Pa.

If you write maker identify as IEN-9495

METER . . Electronic equipment reads flow rate in liquids and gases

Source: MINNEAPOLIS-HONEYWELL REGULATOR CO.
4456 Wayne Ave., Philadelphia 44, Pa.



Flow rotates propeller

New combination has been made of the Potter sensing element, previously described IEN-10037-50 for installation in a pipe line, with an electronic converter and the company's ElectroniK potentiometer. It provides a means to measure flow rate in toxic or highly corrosive substances, viscous liquids and gases. Pressure rating can be to 20,000 lb. and temperature range from minus 270 deg. C. to plus 1,200 deg. F. Potter-Brown Flowmeter is the designation.

The equipment consists of a sensing element of suitable design for a given installation to produce an ac. output as flow in the line causes the metering element to rotate. This output is connected electrically to converter which produces a dc. voltage proportional to the frequency of the ac. output. It is connected to the indicating and recording potentiometer.

If you write maker identify as IEN-9496

SAWING . . Portable electric tool for metal, plastic, rubber, wood

Source: MILWAUKEE ELECTRIC TOOL CORP.
5368 W. State St., Milwaukee 8, Wis.

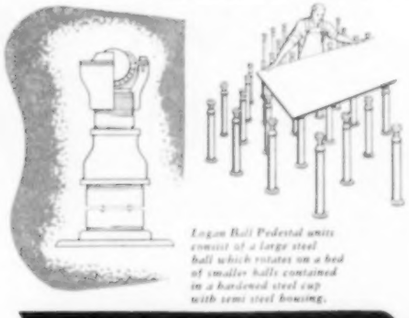
List price with case and blades is $78.50

Draw-cut action at 2,250 strokes per min. tends to hold this new Sawzall portable electric tool against a work surface so the operator can concentrate his attention on guiding the cut. The universal motor operates on 110-volt input and is mounted on permanently lubricated and sealed ball and roller bearings. Overall length is 14½ inches. Weight is 6¾ pounds.

The saw blade operates through a ¾-in. stroke. It connects to the reciprocating spindle inside the tool back of a hinged foot plate. It is pointed on its end to penetrate soft work so no starting hole is required. The tool is supplied with a set of saw blades to cut various materials and is packed in a steel case. Nails present no obstacle in opening packing cases.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 58

If you write maker identify as IEN-9497



Logan Ball Pedestal units consist of a large steel ball which rotates on a bed of smaller balls contained in a hardened steel cup with semi steel housing.

BALL PEDESTAL

Logan Ball Pedestals are particularly adapted to handling sheets or plates around shears and punch presses or other machines. The ball units permit turning or moving the plates in any direction and the pedestal construction provides a means of conveying without blocking the working area.

Logan offers Ball Pedestal units in several different sizes. Further information on request.

Ball Transfer units also available for table mounting.

Logan Conveyors

LOGAN CO., 276 CABEL ST., LOUISVILLE, KY.

If you write maker identify as IEN-9498

QUICK-READING TEMPERATURE-CONVERSION TABLES

For speed, when you're converting degrees F to C, and vice versa, you can now use a simple, compact "Sauveur-type" table all the way from absolute zero to 3350 C and 6062 F, in increments of one degree.

For quantities, there's a slight charge: ten copies for 75¢; 50 for $3.25; 100 for $6.00. To minimize bookkeeping, we must ask that orders be accompanied by check for the exact amount, addressed to our Advertising Dept. . . . but please note that a single copy will be sent free on request. Better get one!

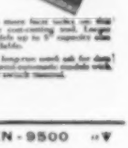
LEEDS & NORTHRUP COMPANY, 4901 STENTON AVE., PHILA. 44, PA.
LEEDS & NORTHRUP
MEASURING INSTRUMENTS · TELEMETERS · AUTOMATIC CONTROLS · HEAT-TREATING FURNACES
(01-44 EN-33-1)

If you write maker identify as IEN-9499

Saves Time on deburring, facing, chamfering, center drilling, reaming operations . . .

Designed to speed tube, pipe, and rod end-finishing work of any size or length up to 2" diameter. Has a new-type chuck and clamping unit, automatic swing-type stock stop, interchangeable jaw inserts, multiple tool holders, precision spindle bearings, ½ hp. motor, 8-speed sheave. Portable, weighs only 170 lbs. Fast, easy to operate, has quick change-over features. Forward movement of operating lever, clamps piece, removes stock stop, feeds work to cutters. Operator always has one hand free for loading. Saves time. Typical production: 400-500 tube ends per hour. Speeds output.

Write for Free Bulletin



PINES ENGINEERING CO., INC.

630 WALNUT ST., AURORA, ILLINOIS

If you write maker identify as IEN-9500

EVERY STEP A SAFE STEP WITH BLAW-KNOX GRATING

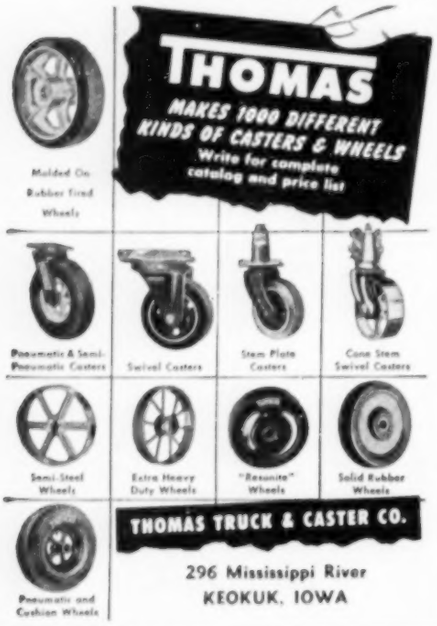
Everyone walks safely, confidently on Blaw-Knox Electroforged Steel Grating . . . the one-piece panels stay rigid and strong—without shimmy or shake—because there are no parts to work loose. Twisted cross bars provide sure footing under the most adverse conditions. For complete information, write for Bulletin 2365.

BLAW-KNOX GRATING
Industry's first choice for
• SAFETY • STRENGTH • LONG LIFE
• LOW UPKEEP • SELF-CLEANING

Grating Department
BLAW-KNOX DIVISION of Blaw-Knox Co.
2050 Farmers Bank Bldg.,
Pittsburgh 22, Pa.

BLAW-KNOX ELECTROFORGED® STEEL GRATING

If you write maker identify as IEN - 9501



If you write maker identify as IEN - 9502

If you write maker identify as IEN - 9503

If you write maker identify as IEN - 9504

JACK . . For cable reels, weighs 83 lb. and rates 10 ton load

Source: TEMPLETON KENLY & CO.
1012 S. Central Ave., Chicago 44, Ill.

Aluminum is employed in the housing of this new Simplex A1629 reel jack to reduce weight by 21 lb. from the 104 lb. total in the company's previous similar design. It employs a single acting mechanism and is mounted on a laminated oak base as shown in the illustration. Closed height is 29 inches. Lift is through 13¾ inches. A 5-ft. operating bar is supplied as standard equipment.

If you write maker identify as IEN - 9505

INSULATING . . Semi-vulcanized tape for electric coils, cures in place

Source: DOW CORNING CORP.
P. O. Box 592-A, Midland, Mich.

Technical Data G-25 upon request

Modifications have been made in the company's previously developed Silastic-R tape to improve strength and toughness and to minimize water absorption. The material is a Class H electric insulating material as defined in AIEE standards. It is supplied in semi-vulcanized form and is made up of impregnated glass cloth. It is wrapped in place and cured at about 350 deg. F. to become a continuous uniform jacket, resilient, heat stable, and moisture proof. It will retain its physical, chemical and dielectric properties at temperatures ranging from minus 70 to plus 400 deg. F.

Three thicknesses are 10, 15 and 20 mils. Corresponding tensile strength per inch of width is 50 and 90 pounds. A characteristic of the material is that it will retain its ability to keep out moisture and its high dielectric properties without cracking or becoming brittle at high temperature.

If you write maker identify as IEN - 9506

PROTECTING . . Scotchlite cape makes men directing traffic visible

Source: INDUSTRIAL PRODUCTS CO.
2801 N. Fourth St., Philadelphia 33, Pa.

About $6

White canvas with silver Scotchlite reflecting strips on the front and back make up a new cape to be worn by men directing traffic during the day or night. The cape can be worn as shown in the illustration. The bottom corners can be snapped to the back to permit full arm movement. One size will fit any individual. The cloth is sanforized and can be laundered without shrinking.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9507

If you write maker identify as IEN - 9508

If you write maker identify as IEN - 9509

If you write maker identify as IEN - 9510

If you write maker identify as IEN-9511

SAVES UP TO 50% ON FASTENINGS IN LIGHT GAUGE SHEET METAL

The Original P-K Sheet Metal Screw

SKIPS Tapping — Forms Own Threads

AVOIDS Bolting Riveting Soldering

SAVES Time and Trouble in Millions of Assemblies.

P-K TYPE A Hardened SELF-TAPPING SCREW

One of many types of Parker-Kalon Self-tapping Screws for faster, stronger metal and plastic assemblies. For details, write Parker-Kalon, 200 Varick St., New York 14, N. Y.

Call in a P-K Assembly Engineer
See why industry's fastening-wise leaders say —
IF IT'S P-K® — IT'S O.K. — THE ORIGINAL
PARKER-KALON® SELF-TAPPING SCREWS

AVAILABLE EVERYWHERE THROUGH ACCREDITED DISTRIBUTORS

If you write maker identify as IEN-9512

Yes, We Can Do It!

We Can Quote on Your Application, Accept Your Order and DELIVER

We are in an enviable position whereby we can deliver the answer to your assembly problem in the form of a particular piece of equipment designed especially for your needs . . . We can do it NOW —not maybe—some time in the future. Though generally speaking, deliveries throughout industry are uncertain, and this situation probably may continue for some time, our position is different . . . We have marshalled our resources and facilities in a way whereby we can positively assure the execution and delivery of your orders without delay.

DETROIT POWER SCREWDRIVERS, HOPPER FEEDING UNITS
NUT DRIVERS, SPECIAL ASSEMBLING MACHINES

Thousands of manufacturers have profited through greatly stepped-up production as a result of our service. You, too, can benefit by the use of D. P. S. power-driven machines. Get further details. Also send sample assembly for production estimate.

DETROIT POWER SCREWDRIVER CO.
2815 W. FORT ST. DETROIT 16, MICH.

If you write maker identify as IEN-9514

THERMOMETERS . . Dial indicator and recorder, minus to plus 200 deg. F.

Source: DICKSON CO.
7424 S. Woodlawn Ave., Chicago 19, Ill.

Six standard scale ranges

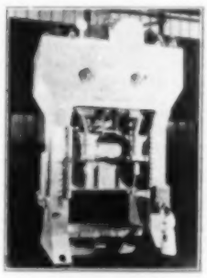
Overall range within which the company's new Model PD indicating thermometer and Model NR recorder can be specified is from minus 200 to plus 200 deg. F. The indicating unit shown to the left in the illustration is an example. As shown it reads from minus 150 to plus 100 deg. F. Both instruments have been designed to read sub-zero as well as elevated temperatures in connection with shrink fitting, stabilization, stress equalization and for equipment test in simulated service.

Model PD is available in 6 and 8-in. diameters. Model NR takes a 12-in. circular chart with synchronous motor drive. A spring wound clock drive can be specified. The housings of both thermometers are made of aluminum with Hammerloid finish in dark grey. Connection to the point of actuation is by an 8-ft. stainless steel armored tube in standard construction. The mechanism is protected against dust and moisture by rubber gasketed connections on the housing. The temperature sensitive bulb is cylindrical in shape. It measures ¾ in. in diameter by 11 in. in length.

If you write maker identify as IEN-9515

PRESS . . Double acting mechanical rates 450 ton, 14 strokes per minute

Source: DANLY MACHINE SPECIALTIES INC.
2102 S. Laramie Ave., Chicago 50, Ill.



To specification

Illustrated is a new example in the company's line of large double acting presses in which its Dynamatic clutch mechanism permits accelerated operation during those portions of a cycle when the work is not actually being formed. At the same time slide speed is reduced during effective draw portion of the cycle to a little over 60 fpm. for best results.

Both the outer blank holder and the inner ram slide are provided with motor adjustment and, in addition, the blank holder has a ¼-in. pinch adjustment that can be set at each corner to vary the holding pressure for uneven draws.

The press mounts on a foundation flush with the floor so no pit is required. Lubrication is by a pressure pump, filter and controls to the major bearing points. If oil pressure fails the press shuts down until the cause has been removed.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-9516

RUEMELIN *Blast Cleaning* CABINETS

RUEMELIN Blast Cabinets are practical for a great variety of cleaning operations. They are extensively used to remove heat-treating scale and to clean sub-assemblies in metalworking shops, foundries, aircraft factories, etc. Built in many sizes. Furnished complete with dust control equipment. Write for Bulletin 32-B.

RUEMELIN MANUFACTURING CO.
3843 N. PALMER ST. • MILWAUKEE 12, WIS., U. S. A.
Manufacturers and Engineers SAND BLAST AND DUST COLLECTING EQUIPMENT, WELDING FUME COLLECTORS

If you write maker identify as IEN-9517

Standardize on STA-WARM COMPOUND MELTERS

Many nationally known manufacturers and large users of melted compounds have found that the wide and varied line of melting tanks, kettles and pots at Sta-Warm meets all of their production and laboratory requirements. In addition, Sta-Warm heated specialties . . . pipe, hose, valves, etc. . . . increase the flexibility of the tanks by adapting their use to the problems in the plant.

Sta-Warm also offers engineering service to help solve special or unusual compound melting problems with the result that you, too, can find at Sta-Warm all the help you require to reduce compound melting costs to rock bottom.

Inquire for help on your next specific problem.

Sta-Warm ELECTRIC CO.
560 N. CHESTNUT ST., RAVENNA, OHIO

If you write maker identify as IEN-9518

NEED COPIES?

MODERN MIMEOGRAPHING—New equipment and supplies for the fast production of copies on a wide variety of paper and card stocks. A. B. Dick mimeograph products are for use with all makes of suitable stencil duplicating products.

MODERN OFFSET—A. B. Dick lithograph direct image plates and masters provide for (1) longer runs with sharp definition—(2) easier corrections—(3) more successful filing—(4) marked superiority in resistance to fingerprints.

MODERN SPIRIT DUPLICATING—A. B. Dick CLEEN-SEAL master sets and spirit carbons guard against stains and smudges. Available in a variety of sizes for long, medium and short runs. Five brilliant colors—purple, red, green, blue and black.

Write Dept. IEN952 *for full information—or call the A. B. Dick Distributor listed in the classified section of the phone book.*

A·B·DICK
THE FIRST NAME IN DUPLICATING
A. B. Dick Company • 5700 Touhy Avenue • Chicago 31, Illinois

If you write maker identify as IEN-9519

NEW!

Black & Decker ¼" Heavy-Duty HOLGUN* only $44.00

NOW . . . INDUSTRY'S MOST FAMOUS ELECTRIC DRILL IS FINER THAN EVER! This brand-new BLACK & DECKER HOLGUN has 25% *more power* with a new B&D-built motor that *can't be stalled* at rated capacity—a new handle shaped for plenty of finger room — husky, high quality parts to make at really *heavy-duty* — light weight (3¼ lbs.) to cut fatigue — compactness that's unmatched for close-quarter drilling. See your nearby B&D Distributor for a demonstration of features that save you money, muscle and man-hours! WRITE FOR FREE LITERATURE TO: THE BLACK & DECKER MFG. CO., 615 Pennsylvania Ave., Towson 4, Md.

*Trade Mark Reg. U. S. Pat. Off.

LEADING DISTRIBUTORS EVERYWHERE SELL
Black & Decker PORTABLE ELECTRIC TOOLS

If you write maker identify as IEN - 9520

KNOCKOUT BLOW!

DOWN time for your machinery is OUT time on your profit statement. To keep operation at peak efficiency, keep Dirt, Dust, and Grit out of every crack and crevice. Knock 'em out with a CLEMENTS CADILLAC blower-suction cleaner—regularly.

Eligible under C.M.P. regulations.

SAVE TIME · MONEY PREVENT DAMAGE TO MACHINERY WITH THE . . .

Made in 5 models with attachments for every cleaning job.

PORTABLE COMBINATION BLOWER-SUCTION CLEANER

CLEMENTS CADILLAC

CLEMENTS MFG. CO.
6620 S. NARRAGANSETT AVE., CHICAGO 38, ILL.

ASK YOUR MILL SUPPLY DEALER OR WRITE US FOR DATA

If you write maker identify as IEN - 9521

CAST IRON FRAME MOTORS

resist corrosion . . .

Wagner cast iron motors are built for use wherever protection against corrosion is required. They are totally-enclosed and fan-cooled to fully protect their operation against corrosive agents, dirt and dust. Where additional protection against explosive atmospheres is desired, an explosion-proof design is available. Both the standard and the explosion-proof types are built in ratings from 2 to 250 hp, with either normal or high torque characteristics. Bulletin MU-132 gives complete information. Write for your copy today.

Wagner Electric Corporation
6414 PLYMOUTH AVENUE
ST. LOUIS 14, MO.

ELECTRICAL EQUIPMENT AND AUTOMOTIVE BRAKE PRODUCTS

If you write maker identify as IEN - 9522

"We have used your Bin-Dicators in our fertilizer plant for some time and would not be without them. I can show you a case where a single Bin-Dicator replaces a man," writes a New England manufacturer.

BIN-DICATOR

"keeps an eye" on levels of bulk materials in silos, hoppers, bins, chutes and automatically reports to central control point. Prevents over-filling; prevents overfeed and underfeed to conveyors and filling equipment; prevents delays and waste. Low cost, easy to install, simplest operation. Widely used.

BIN-FLO Aerator Units keep dry, finely ground materials moving in bins, hoppers, chutes, prevent packing, bridging.

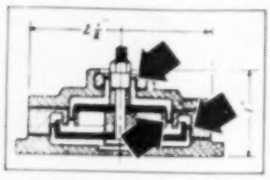
NEW 1952 CATALOG FREE

THE BIN-DICATOR CO.
13946-B Kercheval · Detroit 15, Mich.

If you write maker identify as IEN - 9523

SEALING . . Non-metallic diaphragm provides constant area rolling action

Source: KENDALL CONTROLS CORP.
148 Moody St., Waltham 54, Mass.



Flexible and friction free

Bellofram trade names new diaphragm that combines the characteristics of a bellows and a diaphragm. It is a thin-section material made of Buna-N with a Nylon or Orlon fabic insert or silastic with Fiberglas insert. It seals and provides a constant pressure area for a piston movement. The frictionless rolling action does not stress the material in short or long stroke applications. Tests indicate service to be 5,000,000 cycles or more at 500-lb. pressure.

Manufacture is in the company's Bellofram Division for specified applications in an overall temperature range between minus 65 and plus 600 deg. F. with pressure from ¼ in. of water to 500 lb. per square inch. Sizes can be specified. Three of the units are shown in the illustrations of a pneumatic instrument assembly. Applications in the company's own control equipment are shown in IEN-9543, IEN-9561, and IEN-9579 on following pages in this issue.

If you write maker identify as IEN - 9524

WOODWORKING . . Electric plane for portable use, 13,500 rpm. free

Source: SKILSAW INC.
5039 Elston Ave., Chicago 30, Ill.

About $140

Cut width is 3 in. and depth of cut is to ⅛ in. for this new Model-190 portable electric plane. Drive is by a universal motor operating on 110-volt input or on 220 volts to specification. The motor connects through a sprocket type flat belt that engages teeth on the motor and spindle pulleys. Control centers at a momentary contact trigger switch.

The assembly includes a chip deflector that can be set to direct the chips to the right or left. Bevel adjustments can be made after loosening two wing nuts to set a guide plate. The tool weighs 10½ pounds. Its shafts ride on ball bearings in an aluminum housing. Length is 17½ inches.

Identify as IEN - 9525

Cargo Packers is a New York outfit specializing in the packaging of delicate equipment, particularly electronic, so it will travel safely from here to there. The equipment is protected against breakage, fungus, rust, vibration, immersion and damage from harmful vapors or from any other conditions you wish to name.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9526

RESERVE YOUR COPY NOW

NEW

SET SCREW CATALOG *ITS FREE!*

Ready Soon: newest catalog of Setko Set Screws with all style heads and points in all metals. Includes data on ZIP-GRIP* Self-Locking Set Screws used for excessive vibration and the *new* Super Nu-Cup Set Screw which gives increased holding power with the same setting torque. Catalog gives latest dimensional data, list prices and technical data from plant with 17 years of specialized experience in supplying billions of set screws to nearly 1300 manufacturers. Simply Write Your Name and Address in Margin and Mail, Now!

*Pat. Pending

Send for FREE DEMONSTRATOR —that demonstrates ZIP GRIP's* Bite-way Self-Locking effect. We'll also include Illustrated Data Sheet and offer of Free Samples to fit your application. Send now.

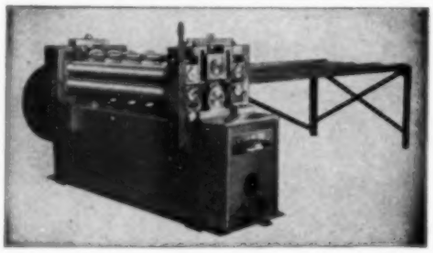
Set Screw & Mfg. Co.
5 Main St., Bartlett, Ill. (Chicago suburb)

We specialize in Solving Puzzling Set Screw Problems.

If you write maker identify as IEN - 9527

RAFTER GANG SLITTER

For Lasting Accuracy



With or without feed rolls for the slitting of varied widths and gauges of metal. Machined and accurately ground cutter shafts made of high-grade carbon steel. Machine cut gears. Generous size bearings. Vertical adjustment of upper spindles allows regrinding of double edge type cutters. By removing two bolts, the end housing is drawn from cutter shafts permitting quick change of cutters. Spacer collars machined and marked for particular job, easily and simply removed for change over of various slitting widths. All features represent accuracy, speed and economy.

RAFTER MACHINE COMPANY, INC.
SINCE 1917
249 Stephens Street Belleville 9, N. J.
COLD ROLL FORMING MACHINES
& PRESS BRAKE FORMING DIES

If you write maker identify as IEN - 9528

HINGES

Stocker Hinges are precision die-stamped from cold rolled steel.

Full acting, 180-degree stop, continuous and butt styles, with or without holes. Plain or plated finishes.

Widely used for metal boxes and cabinets, fluorescent lighting fixtures and all sheet metal products requiring hinges.

Write for complete illustrated catalog of stock items.

The STOCKER HINGE *Mfg. Co.*
114 North Jefferson St.
Chicago 6, Illinois

If you write maker identify as IEN - 9529

SAVE UP TO 85%

WAR SURPLUS SAVINGS

STAND MAGNIFIER 1.49

NEW INSIDE - OUTSIDE VERNIER CALIPERS 9.75 9.75

MAGNETIC BASE - INDICATOR HOLDER 3.50

BENDIX HYDRAULIC PUMP & MOTOR 19.50

HYDRAULIC HAND PUMP 12.75

GEAR HEAD MOTORS 7.95 10.95 EA.

HYDRAULIC ACCUMULATORS 12.75 19.75

ELECTRIC ACTUATORS 7.95

HYDRAULIC CYLINDERS 29.75

No. 1 HYDRAULIC CYLINDER 5.75

$2.50 for CATALOG

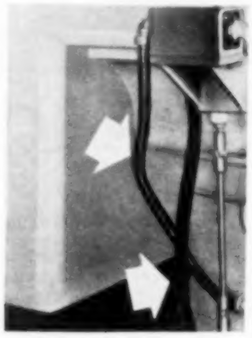
PALLEY SUPPLY CO.
2261 E. VERNON AVE.
Dept. IN-9
LOS ANGELES 58, CALIF.

Order from this ad. Pay by M.O. or check. F.O.B. subject to stock. Terms: 25 deposit with C.O.D.'s. All Prices F.O.B. Los Angeles.

If you write maker identify as **IEN - 9530** "▼

FLEXIBLE ELECTRICAL CONDUIT

American Sealtite — an* ANACONDA *Product — protects wiring circuits against moisture, impact and corrosive fumes.*



This steel-cored conduit is as flexible as garden hose. Its liquid-tight synthetic jacket protects wiring from water, oil, dirt, corrosive fumes and other deteriorating factors. Sealtite can be bent to small radii in cramped spaces and is ideal where wiring must move. For temporary installations, it requires far less time to set up than rigid conduit. In permanent uses, it is strong, long lasting, neat-appearing, virtually trouble-free.

• • • Electrical supply houses sell Sealtite in long random lengths. It may be cut without waste. Sealtite uses the same type of fittings as standard rigid electrical conduit. Descriptive Bulletin C-201 will be sent on written request.

SEALTITE is made by The American Brass Company, American Metal Hose Branch, Waterbury 20, Connecticut.

*Trademark

SEALTITE ELECTRICAL CONDUIT. An ANACONDA Product

If you write maker identify as **IEN - 9531** "▼

CHROMALOX *Electric* HEATERS

Easy to Install · Economical to Operate

CHROMALOX Electric Heaters provide concentrated and controlled heat that is dependable, safe, clean and efficient. They may be used for heating gases, air, liquids, platens, dies, molds, rolls, soft metals and countless other applications. Why not check the time and money saving advantages CHROMALOX Heating Units will give you in your plant?

FOR MORE "KNOW HOW"

Request Catalog 50 and "100 Ways to Apply Electric Heat" booklet for full data on using electric heat in your plant.

EDWIN L. WIEGAND CO., 7505 THOMAS BOULEVARD, PITTSBURGH 8, PA.

See Chromalox Radiant Heating Advertisement, Page 5

CHROMALOX

ELECTRIC HEAT FOR MODERN INDUSTRY

If you write maker identify as **IEN - 9532** "▼

A—Deep crack. B—Tamping Smooth-On in. C—Crack completely sealed.

If You've Never Used SMOOTH-ON, *read this:*

Smooth-On No. 1 Iron Cement is a metallic powder which you mix with water to the consistency of putty. You tamp it, while still soft, into a crack or hole, making sure to force it against all surfaces. With Smooth-On you don't need to use heat or special gadgets. As it hardens, it expands slightly, clinging tightly in place. The repaired part is ready for use as soon as Smooth-On sets hard. Keep Smooth-On handy for both emergency and routine maintenance repairs. Get it in 7 oz., 1, 5, 20, or 100 lb. size. If your supply house hasn't Smooth-On No. 1, write us.

FREE 40-PAGE REPAIR HANDBOOK

Shows many industrial and home repairs made with No. 1 and other smooth-on Cements. Leaks stopped, cracks sealed, loose parts made tight. 170 illustrations. Drop us a line for YOUR free copy.

SMOOTH-ON MFG. CO., Dept. 1
57 Communipaw Ave., Jersey City 4, N. J.

***Do it with* SMOOTH-ON**

THE IRON REPAIR CEMENT OF MANY USES

If you write maker identify as **IEN - 9533** "▼

SEALING . . Spiral Teflon packing to back up O-rings or replace them

Source: ALLIED SCIENTIFIC RUBBER CO.
5813 Marilyn Ave., Culver City, Calif.

Permanently protects the O-Ring

Inside diameter ranges from 0.125 to 15.500 in. in a new line of Teflon backup rings which the company has added to its regular lines of O-ring packings. The new spiral unit is designed to replace leather as a backup ring for the O-rings. Under certain conditions it also applies in place of the O-ring in one continuous spiral of several layers.

The material is chemically inert, it will not shrink, swell harden or soften. It remains serviceable in a temperature range between minus 110 and plus 500 deg. F.

If you write maker identify as **IEN - 9534** "▼

CLEANING . . Powdered material for magnesium and anodized aluminum

Source: KELITE PRODUCTS INC.
1248-52 N. Main St., Los Angeles 12, Calif.

Principally for production use

PWB No. 81 is a new detergent supplied in powdered form for application in power washing machines to clean parts made of aluminum, anodized aluminum and magnesium. The solution will remove all types of soil including ink markings employed by Reynolds, Alcoa and Kaiser.

The detergent will not foam, is not corrosive and is stable in character. It was originally developed for an aircraft manufacturer, now is available for general use. Packaging is in 125 and 500-lb. drums as standard quantities.

If you write maker identify as **IEN - 9535** "▼

THERMOSTAT . . Adjustable controls electric space heater, to 1,650 watts

Source: TITAN MFG. CO.
703 Seneca St., Buffalo 10, N. Y.

About $7

Operation of any electric space heater, rating not more than 1,650 watts, can be controlled by plugging this new Therm-O-Dial into a power source and then plugging the heater into it. It is equipped with a 6-ft. cord and plug and with a receptacle for this purpose. Temperature range can be set between 35 and 95 deg. F. Assembly is in a metal housing. Dimensions are 4½ by 2½ by 1¼ inches. Operation is on 110-volt ac or dc.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . *See Page 50*

If you write maker identify as **IEN - 9536** "▼

What Do You Want To Know About

SCREEN CLOTH?

New Hewitt-Robins Bulletin No. 113-B Gives The Answers . . .

This new 28-page, file-size book tells you how to specify and order the correct size and type of screen cloth for your particular needs. It's free!

Always Specify Hewitt-Robins Screen Cloth for accurate sizing—long service life, less frequent cloth changes. It is made in the weaves, metals and sizes you want.

Super-Gyraloy® oil tempered for the most abrasive-resistant cloth you can buy. It is made of the hardest steel, by far, used in any cloth.

Gyraloy® spring steel where abrasion is not excessive and cost is a primary consideration.

Enamel Coated, made by a patented process, for handling such materials as coke breeze and ore dust.

Special metals: Hewitt-Robins Cloth is also made in plain or galvanized steels, brass, phosphor-bronze, Monel and other ductile metals.

Get your free copy now. Write for Bulletin 113-B today.

HEWITT-ROBINS INCORPORATED
STAMFORD CONNECTICUT

Hewitt Rubber Division
Hewitt Restfoam® Division
Robins Conveyors Division
Robins Engineers Division

If you write maker identify as **IEN - 9537** "▼

Versatile Wrapping Machine

for various size packages

Our Model FA is used around the world for wrapping an endless variety of products. This machine is quickly adjusted for different sizes and can be adapted to handle practically any wrapping material. May be equipped with an electric eye to automatically register each wrap — assures perfect location of all printed matter. Speed, up to 100 packages per minute. And only one operator is needed. Further information on the FA can be obtained from our nearest office.

Write for leaflet "Packages that sell"

PACKAGE MACHINERY COMPANY
SPRINGFIELD, MASSACHUSETTS
NEW YORK CHICAGO BOSTON CLEVELAND ATLANTA DALLAS DENVER LOS ANGELES SAN FRANCISCO SEATTLE VANCOUVER WASH. TORONTO MEXICO D.F.

If you write maker identify as **IEN - 9538** "▼

NEW VITROHM Ring Type RHEOSTATS

25 and 50 Watt

Bulletin 1110 Vitrohm Ring Type Rheostats set a new standard for smooth control, in both fixed and variable current control applications.

Ceramic core and base are bonded by Vitrohm enamel. Special alloy resistance wire is toroidally wound and held permanently secure by enamel. Design of drive shaft and contact arm eliminates backlash assuring uniform contact pressure and smooth operation.

Ratings: — 25 watts from 1 to 2500 ohms
50 watts from 1 to 7500 ohms
Based on 300°C rise in 40°C ambient, NEMA and U.L. Inc. standards.

Standard Resistance Tolerances: +20, —10 percent

Write for Vitrohm Rheostat Bulletin 1110. WARD LEONARD ELECTRIC CO., 33 South Street, Mount Vernon, N. Y. Offices in principal cities of U. S. and Canada.

WARD LEONARD ELECTRIC CO.
Result-Engineered Controls Since 1892
RESISTORS · RHEOSTATS · RELAYS · CONTROL DEVICES

If you write maker identify as **IEN - 9539** "▼

- how you can replace six lamps for the cost of replacing one?
- at what point you can save money by group lamp replacement?
- which lamp cleaning cycle brings you the greatest net gain?
- how you can eliminate 85% of your lamp burnouts?

CHAMPION LAMP WORKS
LYNN, MASSACHUSETTS

Please mail your Free File Folder D on planned cleaning and group replacement, at no cost or obligation to:

Name ______ Position ______
Company ______
Street ______
City ______ State ______

If you write maker identify as IEN - 9540

Every driver in the complete Stanley line is made for fast, accurate tightening. Blades are carefully tempered for maximum toughness . . . tips are accurately cross-ground, fit snug in screw slots . . . and large, comfortable handles provide a sure grip every time. For safety's sake and better work, replace your worn drivers now. Standardize with Stanley . . . you'll get more for your money. Your distributor carries these Stanley Drivers and a complete line of Stanley Tools. Stanley Tools, New Britain, Connecticut.

No. 20 — The famous "Horwood". One-piece blade, shank and head forged from finest alloy steel. Hardwood handle. Standard blade and tip. Available in 2½, 3, 4, 5, 6, 8, 10, 12" blade lengths.

No. 1006 — Rugged "Steelhead" Driver. Tough plastic handle stands plenty of abuse. Blade with bolster to take extra strain. Available in five blade lengths—4,6,8,10,12".

No. 2702 — For Phillips Screws and Bolts. Alloy steel bar, securely fastened to hardwood handle. Precision-machined points — available in four point sizes for all Phillips Screws.

STANLEY — THE TOOL BOX OF THE WORLD

Reg. U.S. Pat. Off.

HARDWARE • TOOLS • ELECTRIC TOOLS • STEEL STRAPPING • STEEL

If you write maker identify as IEN - 9541

KEYNOTES

"There's no stopping Wilbur since we began using Key-Tite to speed our pipe assembly."

The perfect seal for pipe joints that carry water, gas, low-pressure steam, etc.

Write For FREE Sample!

SEALS TIGHT... BREAKS RIGHT!

A Product of KEY COMPANY

KEY-TITE WATER PROOF PIPE JOINT COMPOUND

2651 McCausland · East St. Louis, Illinois

If you write maker identify as IEN - 9542

FELT! BY THE YARD
FELT! BY THE ROLL
FELT!
IN CUT PARTS

WE MAKE IT . . . WE CUT IT . . . WE SELL IT . . .

All grades • All colors • All textures
All thicknesses • All consistencies

WRITE TODAY FOR FULL DETAILS

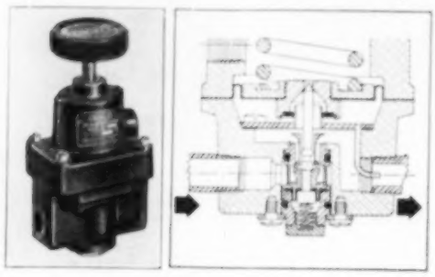
THE FELTERS COMPANY
210-I SOUTH STREET, BOSTON 11, MASSACHUSETTS
Offices: New York, Philadelphia, Chicago, Detroit, St. Louis
Sales Representatives: San Francisco, Dallas

MAKES THE FELT FOR THE PARTS IT CUTS

If you write maker identify as IEN - 9543

VALVE . . Air pressure regulator spring loaded for inlet to 250 pounds

Source: KENDALL CONTROLS CORP.
148 Moody St., Waltham 54, Mass.



Single units list at $13

Midget assembly, Model 30, has been added to the company's previously developed Model 10 air pressure regulator. The new unit is characterized by its ability to hold regulated pressure on dead-end service within 0.05 lb. with variation of 25 lb. in supply pressure.

The ball-jointed valve stem carries integral stainless steel ball and needle at the stainless steel inlet and relief ports. It is supported by a spring and floats with a diaphragm seal located below the inlet. This seal is acted upon by inlet pressure from both above and below through an equalizing port in the stem.

Entering air, at the left, moves through a strainer surrounding the inlet port, passes upward to fill the outlet chamber and to issue through the outlet on the right. It also fills the small sealed compartment surrounding the stem below the upper spring-loaded diaphragm and it moves back through the restricting tube to fill the control chamber. Increasing outlet pressure acts upward against the diaphragm, moves it upward, the stem moving with it as pressure approaches set point.

The inlet will close at this point and the relief valve will remain closed unless there is an increase in pressure above the set point for any reason. Then the relief port will be lifted from the needle valve and the excess air will escape.

The tube between the outlet and control chambers provides damping action to promote stable action and eliminate any tendency to flutter. It also depresses control pressure on increasing flow through the valve to cause regulated pressure to rise a little in a flow boosting action.

Inlet and outlet are threaded for ¼ in. pipe. Gage connections are provided with ⅛-in. pipe threads. Distance between inlet and outlet is 2¼ inches. Height of the aluminum body and bonnet is 3½ inches. A cap on the bottom permits withdrawing the valve mechanism for inspection. The two diaphragms are the company's Reliofram, IEN-9523, this issue.

Identify as IEN - 9544

It looks like a big shelf assembly partitioned into openings, each large enough to take one automobile. It is a metal structure dreamed up by Evans Enterprises to ease the parking problem. It can be set up in any handy location and operates with a power lift truck. You drive your car into a parking space in front and leave it there out of gear and with the brakes released. The attendant picks the car up by means of the truck and deposits it in an open spot on one of the shelves. He picks it out again and brings it down to the ground whenever you want it for a small parking price.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9545

SIZE 6 and SIZE 7 SOLENOID STARTERS

- Silver Alloy Contacts
- Simple, Rugged Construction
- Steel Panel Mounting
- Front of Panel Wiring

Now—all the advantages of SOLENOID design in the NEW Allen-Bradley BULLETIN 709 SIZE 6 and SIZE 7 STARTERS. Allen-Bradley Bulletin 709 Size 6 and Size 7 solenoid starters possess all the features that have proved so successful in smaller Allen-Bradley starters. Write, today, for information. Allen-Bradley Co., 1312 South Second Street, Milwaukee 4, Wisconsin.

ALLEN-BRADLEY
QUALITY
MOTOR CONTROL

If you write maker identify as IEN - 9546

Need Rails—Switches—Frogs—Guard Rails or Track Tools? For best selections and prompt deliveries—try FOSTER—shipments of most items can be made from stocks in our five nationwide warehouses.

RAILS—New and Relaying Foster stocks are being replenished daily. Any items we did not have last week, we'll probably have next week. We match specifications and sizes to meet all your requirements on any job, new installations or replacements. *Call on Foster for all your needs for Industrial Track Equipment and Supplies.*

Write for Track Equipment Bulletin IE9.

L. B. FOSTER CO.
CHICAGO 4, ILL. HOUSTON 2, TEX.
PITTSBURGH 30, PA. NEW YORK 7, N.Y.

If you write maker identify as IEN - 9547

LIKE AN
ATOM-IC
EXPLOSION

Just 1/32" (pinhole size) faucet leak

MUSHROOMS into ATOMIC WASTE

of approximately 95,000 gallons of water yearly—costing:

$24.14

@ $1.90 per M cubic feet

If a hot water faucet, then actual FUEL WASTED heating 95,000 gallons costs approximately:

$66.91 if coal (9675 lbs.)
$91.08 if oil (792 gals.)
$84.41 if gas (86,411 cu. ft.)

Above figures authenticated by Hackensack Water Co. and American Gas Association.

STOP this needless WASTE during today's MATERIAL and MANPOWER shortages with "SEXAUER" "Easy-Tites" that outwear ordinary faucet washers 6-to-1, thus SAVING labor on 5 REPEAT repairs, PLUS water and fuel, while prolonging the life of SCARCE fixtures.

PAT'D.

"EASY-TITE" Faucet washers

. . . a modern laboratory triumph, are compounded from du PONT NEOPRENE (tested up to 300°F.) instead of rubber—to withstand DESTRUCTIVE HEAT common in present-day superheating water systems—that formerly broke down washer's structure.

Built like a tire with fabric re-inforcement

they resist the grinding, closing squeeze that SPLIT and MUSH ordinary washers out of shape . . . causing LEAKS.

Through combining NEOPRENE and FABRIC RE-INFORCEMENT they OUTWEAR ordinary washers 6-to-1 on hot or cold FAUCETS—thus you slash water, fuel and labor costs.

THE NEW "SEXAUER" CATALOG, Edition G, just out pictures over 2500 TRIPLE-WEAR plumbing REPAIR parts and Pat'd. Precision Tools. It's today's accepted buying guide for discriminating purchasing and maintenance personnel among thousands of top PLANTS, INSTITUTIONS and GOVERNMENT AGENCIES that rely on SEXAUER repair materials. Send for your copy today!

Then too, there's a SEXAUER TECHNICIAN within quick call from coast-to-coast, who offers a special SURVEY service that sets up a schedule of the exact replacement parts required for your particular plumbing fixture regardless of make or age and without obligation.

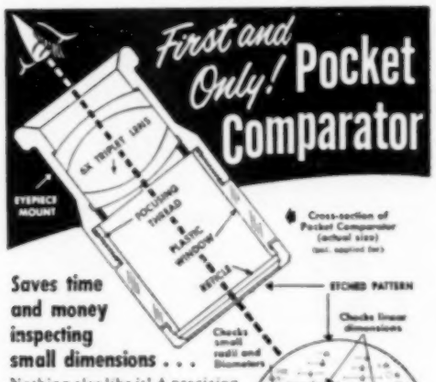
A postcard will bring him and your NEW Catalog promptly.

J. A. SEXAUER MFG. CO., INC., Dept. K-92
2503-05 Third Avenue, New York 51.

as advertised in **THE SATURDAY EVENING POST**

SEXAUER
WORLD'S LEADING SPECIALISTS IN PLUMBING AND HEATING REPAIR PARTS

If you write maker identify as IEN-9549



Saves time and money inspecting small dimensions . . .

Nothing else like it! A precision optical measuring instrument for fast, accurate inspection of small dimensions. Save time and money measuring wear on cutting tools, checking forms and dimensions of punches, dies and gauges—as well as radii, angles, chamfers, threads and small holes on production parts.

PRICE $36.00
ORDER TODAY

A product of BELL & HOWELL CO. Distributed by

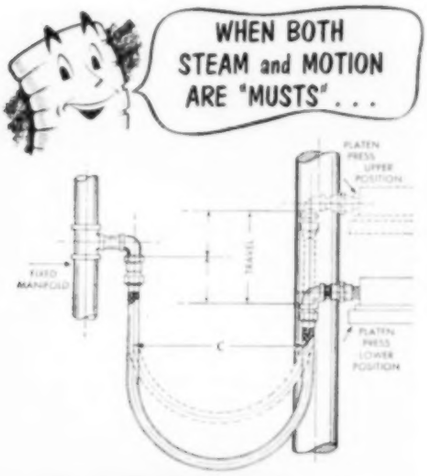
See Your National Tool Co. Representative or Local Jobber

NATIONAL TOOL CO.

11220 Madison Avenue Cleveland 2, Ohio

Write for FREE descriptive folder

If you write maker identify as IEN-9550



Use Only UNIVERSAL Flexible Steam Connections

They're tough — flexible and economical. Widely used for movable platen presses, tire molds, laundry pressing machines and similar equipment requiring flexing many times per hour. Available in lengths to your specifications and equipped with heat-proof male and union female connectors as required.

Write for Catalog U-101 and data sheet showing proved method for installing Universal Seamless Flexible Metal Hose in vertical loops.

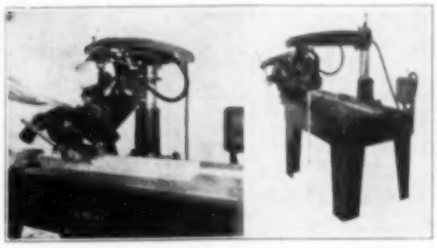
UNIVERSAL METAL HOSE CO.

2131 S. Kedzie Avenue Chicago 23, Illinois

If you write maker identify as IEN-9552

WOODWORKING . . Radial machines for sawing, shaping, routing, dadoing

Source: DE WALT INC.
63 Fountain Ave., Lancaster, Pa.



New motors and new cutting capacities

The company announces new design of the ball bearing motor now employed on its Model-R2 receding arm radial machine, previously described IEN-4630-51. The new assembly is shown to the left in the illustration. It is available with a motor rating 2, 3 or 5 hp., the smallest being recommended for not more than a 12-in. blade, the other two taking a 12 or 14-in. blade. Depth capacity, with the blade set square, is 3½ in. for a 12-in. blade and 4½ in. for a 14-in. blade.

Model GRR, to the right, has been tested recently to drive a 16-in. blade, as compared to the previous recommended maximum of 14 in., in order to increase the depth of cut from 4½ to 5½ in. when the blade is set square. This machine is a 5-hp. unit in which the trunnioned motor rides a track on the overarm. In both machines the motor is flat across its bottom surface to provide the required clearance.

If you write maker identify as IEN-9553

WEIGHING . . Over and under scale, load capacity to 2,000 milligrams

Source: EXACT WEIGHT SCALE CO.
942-46 W. Fifth Ave., Columbus 8, Ohio

For precision work

Model UAB, No. 9061, is a new assembly in the company's line of Shadograph precision scales. It is sensitive to 1 milligram. It is characterized by its Shadoedge indication of "over" or "under" a predetermined weight and by its combination damping and stabilizing action. Overall scale length is 2½ in. for 30 milligrams under or 20 milligrams over the predetermined zero position.

The scale measures 11½ by 7 by 10 in. and weighs about 15 pounds. It requires connection to a 60-cycle 110 or 220-volt ac. circuit. It is available in one assembly for industrial use and in a second one for application under hazardous conditions.

The commodity container is an aluminum pan 1 in. in diameter by ¼ in. in depth with a pouring spout and handle. The housing is made of aluminum. Two of the three supporting feet are adjustable in connection with a built-in spirit level.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 30

If you write maker identify as IEN-9554

A PAID NEWS ADVERTISEMENT BY REMINGTON RAND INC.

PREVENTIVE MAINTENANCE

—folder describes simplified low-cost control system

A new folder describing a highly effective system of preventive maintenance control is offered by Remington Rand.

The system described in this folder is working successfully for many industrial firms, large and small, in all fields. The folder shows how to avoid costly down-time, by a near-automatic method of scheduling periodic check-ups, thereby extending the productivity and life of motors, machines, and equipment. Another important benefit: you make deliveries on time . . . build customer good will.

Especially remarkable, the folder shows how some firms do a *better* maintenance job with *lower* inventories of parts and supplies. You'll see ample evidence too that these desirable results are obtained simply . . . often with less clerical help than is normally needed. A copy of this folder, KD705, may be obtained by writing direct to Remington Rand, or by using the Reader Service Form herein.

REMINGTON RAND INC.
Management Controls Library, Room 1341
315 Fourth Ave., New York 10, N. Y.

If you write maker identify as IEN-9555

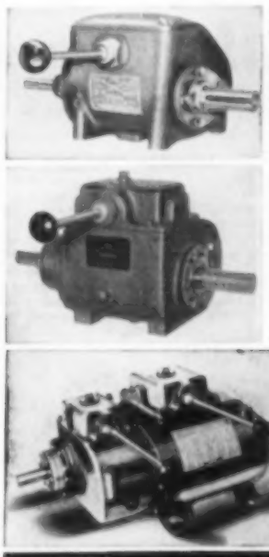


plate or platform mounting

9000-B (1-5 H. P.) 5 H. P. capacity with input speed of 900 r.p.m. Gear ratios: 1:1 - 2:1 - 3:1 - 4:1. Special ratios at extra cost.

8100-B (5-10 H. P.) 10 H. P. capacity with input speed of 900 r.p.m. Gear ratios: 1:1 - 2:1 - 3:1 - 4:1. Special ratios at extra cost.

9300 (30 H. P. capacity with input speed of 900 r.p.m.) 8 speed Changes in Geometric Progression of 1.29 (Total reduction of 6:1).

Send for catalog and complete information

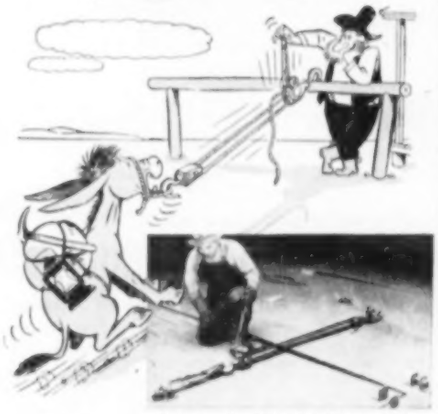
up to 50 h. p.

WESTERN TRANSMISSIONS

WESTERN MANUFACTURING CO. — DETROIT, MICHIGAN

If you write maker identify as IEN-9556

There's a YALE hoist for every lifting need!



Uses for the YALE PUL-LIFT can be found in any industry where there is a necessity for low-cost pulling or lifting.

Industries of all types solve difficult *lifting* and *pulling* problems with the light-weight YALE PUL-LIFT. Universal ratchet action makes it easy to use . . . exclusive YALE design provides capacities up to 15 tons. Yes, your business can realize important savings in time, money and manpower by applying the YALE PUL-LIFT to countless maintenance and construction operations. CALL YOUR LOCAL YALE INDUSTRIAL DISTRIBUTOR FOR COMPLETE INFORMATION . . . he's listed in the classified pages of your local phone directory under the heading Hoists, Industrial.

YALE is a registered trade mark of The Yale & Towne Mfg. Co.

The Yale & Towne Manufacturing Co., Phila. 15, Pa.

YALE PUL-LIFTS

SOLD THROUGH INDUSTRIAL DISTRIBUTORS

MAIL THIS COUPON TODAY

The YALE & TOWNE Mfg. Co., Dept. 369
Roosevelt Blvd. & Haldeman Ave., Philadelphia 15, Pa.

I'm interested in lifting far less with a YALE Hoist.
☐ Please have your local Hoist Distributor call on me.
Please send detailed literature on:
☐ YALE Pul-Lifts. ☐ YALE Hand Hoists. ☐ YALE Electric Hoists.

Company _____
Name _____ Title _____
Street _____ City _____ State _____
In Canada write: The Yale & Towne Mfg. Co., St. Catharines, Ont.

Gas and Electric Industrial Trucks • Worksavers
Hand Trucks • Hand and Electric Hoists • Pul-Lifts

If you write maker identify as IEN - 9558

Rolling Steel Doors

Manually • Mechanically • Power Operated

No other type of door offers as many desirable features as a good Rolling SteelsDoor . . . open or closed, they occupy no usable space inside or outside the opening. All-metal construction assures permanence and a lifetime of continuous trouble-free service. Push-button controlled vertical roll-up action provides the quick, timesaving door operation demanded today by all industrial and commercial concerns. When you buy Mahon Rolling Steel Doors you get the latest developments in doors of this type—comparison will convince you. See Sweet's File for complete information, or write for Catalog No. G-52.

THE R. C. MAHON COMPANY
Detroit 34, Michigan • Representatives in All Principal Cities

MAHON

If you write maker identify as IEN - 9559

Any way you look at it . . . MODINE
Stainless Steel GAS UNIT HEATER

offers you the best in modern heating

Only Modine builds gas-fired unit heaters with full STAINLESS STEEL heat exchangers and burners! That's why only Modine combines so many heating extras in a single unit. Longer life, lighter weight, compactness, faster response, balanced heating, no fuel handling, summer cooling. You get them all with Modine. *Write for free copy of Bulletin 9000!* Modine Mfg. Co., 1508 Dekoven Avenue, Racine, Wisconsin.

Modine UNIT HEATERS

If you write maker identify as IEN - 9560

STOP DUST
INSTANTLY with **DUSTKOP**

DUSTKOP, 1400 cfm

DUSTKOP 3600 cfm

300 cfm to 10,000 cfm per unit (22 models)

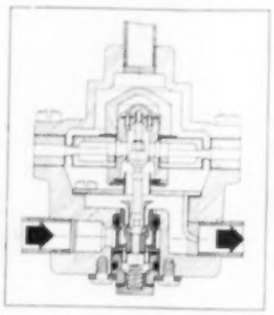
Standard, pre-tested, available from stock. Ask for catalog 605-2. Describe dust problem for recommendation by return mail. No obligation.

AGET-DETROIT CO.
401 Main Street
ANN ARBOR, MICH.

If you write maker identify as IEN - 9561

VALVE . . Diaphragm operated for quick pressure delivery and relief

Source: KENDALL CONTROLS CORP.
148 Moody St., Waltham 54, Mass.



List is about $35 each

Quick supply and equally quick relief of control or operating pressure are provided by this new valve. Lag can be eliminated from pneumatic control lines, diaphragm actuators, air cylinders. A 20-in. diaphragm actuator on a line valve can be completely inflated in about two seconds.

The valve carries ¼ in. pipe inlet and outlet. It is available for 50 or 150-lb. loading pressure and its 1 to ½ to 3 ratios with supply pressure maximum at 250 pounds. Air Volume Booster, Model 20, is the designation. Body diameter is 3 inches. Overall height is 4 inches. Construction is based upon the company's pressure regulator, IEN 9543 this issue.

It employs enlarged inlet and relief ports, equal to each other in size. It extends the valve stem upward to a diaphragm sealed chamber and provides a pressure equalizing passage through the stem from end to end. It replaces the pressure regulator spring with a top-inlet loading chamber and an additional diaphragm. Pressure relief is through ports between the two large diaphragms.

Increase in loading pressure moves the two diaphragms down, opens the inlet port wide for the quick shot of pressure air. Release of the loading pressure permits outlet pressure in the control chamber below the diaphragm to raise them, close the inlet and open the relief port for quick exhaust.

Pressure control is inherent in the design, a 50-lb. pressure variation in the supply resulting is not more than 0.05-lb. change in delivery on dead end service. The valve will respond to changes in loading pressure minimum at ⅛ in. of water. It will reverse from pressure to relief on 2 in. of water. Dumping and depressing action are the same as in the company's regulator. The diaphragms are Bellofram design, described IEN 9523 elsewhere in this issue.

If you write maker identify as IEN - 9562

CLEANING . . Chemical solvent cuts oil and grease from metal parts

Source: WAYNE CHEMICAL PRODUCTS CO.
9503 Copeland Ave., Detroit 17, Mich.

1½ cents per gallon of solution

Kemisol A is a new straw colored liquid for mixture in proportion of 0.5 to 1 per cent with water into which metal parts can be immersed at about 180 deg. F. The liquid is neutral, odorless, non-toxic, non-flammable and harmless to a worker's skin. It will not corrode aluminum, brass, copper and other non-ferrous metals. Typical applications include use in manufacture of ball and roller bearings, cleaning motor vehicle parts prior to chromium plating and lacquering. Weight is 1½ lb. per gal. in 1, 5 and 55 gal. drums.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9563

100 MARKS IN A MINUTE OF MARKING TIME

Marking production will rise with the use of Matthews "AIRGRIT" Marking Machine . . . it takes about a half-second to complete the normal marking cycle with this amazing unit. "AIRGRIT" produces a permanent mark on plastic, glass, cutlery, machined parts . . . parts with delicate or precision finishes which conventional marking methods would mar or distort. "AIRGRIT" . . . the compact, safe, easy-to-operate, revolutionary marking unit for producing permanent, distortion-free, economical marks.

Write Matthews today for literature and information, and a sample of "AIRGRIT" marking.

JAS. H. MATTHEWS & CO.
3962 FORBES ST. • PITTSBURGH 13, PA.
CLIFTON, N. J. BOSTON PHILADELPHIA CHICAGO

If you write maker identify as IEN - 9564

CESCO *RIGHT . . . before your Eyes!*

Put CESCO shields right before the eyes of your workers! They're *right* for safety—sturdily constructed with correct designing for repelling harmful objects. *Right* for comfort—with adjustable headgears formed to the contour of the head. And there's the *right* shield for every job in the wide range of styles and materials from which to choose. ***Send TODAY*** *for CESCO literature and the name of your CESCO safety equipment distributor*

CHICAGO EYE SHIELD COMPANY • 1336 Warren Blvd. • Chicago 12, Ill.

CESCO FOR SAFETY

OFFICES IN: Atlanta, Birmingham, Boston, Buffalo, Cincinnati, Cleveland, Columbus, Detroit, East Orange, Houston, Kansas City, Knoxville, Little Rock, Los Angeles, Mexico City, D. F., Milwaukee, Montreal, Philadelphia, Pittsburgh, Salt Lake City, San Francisco, Spokane, St. Louis, St. Paul, Toledo, Tulsa

If you write maker identify as IEN - 9565

FOR MATERIAL HANDLING—
more and more—the swing is to wide-base pneumatic tires

GENERAL
INDUSTRIAL PNEUMATIC TIRES

More Designers are specifying wide-base General Pneumatics. They know Generals add these extra selling points to handling equipment.

SAVE TIME • MONEY • LABOR

- *MORE LOAD CAPACITY AT LOW OR HIGH SPEEDS*
- *CUSHION EQUIPMENT AND LOADS REDUCING BREAKAGE AND SPILLAGE*
- *SAVE HIGH COST FLOORS AND FLOOR SURFACES*
- *SLOW, EVEN WEAR FOR LONG SERVICE*
- *HIGH FLOTATION FOR EASIER ROLLING OVER SOFT GROUND*
- *ROLLS EASIER, SMOOTHER OVER ALL SURFACES*

Available separately or in assemblies of Tires, Tubes and Wheels. Size O.D. 8" to 27"—200 to 4000 lbs. cap. for low or high speeds.

Rigid CASTER FORKS *Swivel*

Wide-base caster forks engineered to carry heavier loads without adding dead weight to equipment. Available in identical pairs in a wide range of sizes.

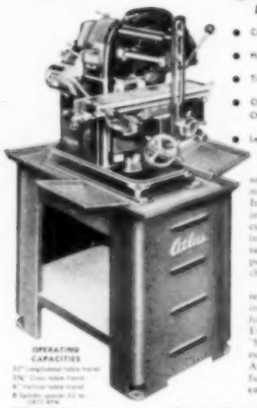
SEND FOR CATALOG . . . DEPT. 6

THE GENERAL TIRE & RUBBER CO. AKRON, O.

If you write maker identify as IEN-9567

MORE EFFICIENT MILLING
OF SMALL PRECISION PARTS

Atlas MILLING MACHINE



- Complete V-belt drive
- Handles full range of milling operations
- Timken bearing equipped
- Choice of manual, Production lever, or Change-O-Matic power feed
- Lowest cost miller on the market

YOU PUT the milling of small precision parts on a maximum-efficiency basis with the Atlas. It performs the full range of milling—from slabbing and facing cuts to end milling, keyways, finishing, and layout work—with the same exacting precision and dependability of large expensive machines . . . *at lower cost.*

It saves many hours monthly on set-ups, saves on power and operating costs—frees bigger machines for jobs that only they can handle. Every feature of larger machines "built down to size" make this the outstanding low-cost miller. Your Atlas distributor will gladly supply full details, or write for complete catalog.

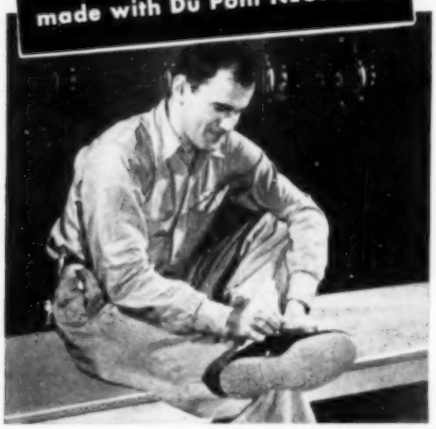
OPERATING CAPACITIES

ATLAS PRESS COMPANY
907 N. PITCHER STREET, KALAMAZOO, MICHIGAN

Atlas DEPENDABLE QUALITY TOOLS SINCE 1911

If you write maker identify as IEN-9568

Better rubber products are made with Du Pont NEOPRENE



Neoprene soles resist abrasion, heat, oil . . . add long wear to work shoes

Rugged neoprene soles are setting new standards of durability in work shoes of all types. Under the toughest service conditions, these comfortable resilient soles frequently outlast shoe uppers.

In factories, neoprene soles resist attack from oil, grease, most chemicals . . . won't soften even when exposed to hot steel flooring. Outdoors, construction men count on neoprene soles to give them long wear despite daily contact with jagged rocks that cut and chip ordinary soles. That's why you'll find rugged soles of all neoprene, neoprene-cord, neoprene-cork, and neoprene crepe on many of the most popular work shoe and safety shoe styles.

In shoe soles, as in thousands of other products, Du Pont neoprene means longer service . . . fewer replacements. While Du Pont makes no finished products of neoprene, your manufacturer or distributor will gladly tell you about the neoprene products he supplies.

FREE! THE NEOPRENE NOTEBOOK

Full of interesting stories. New, unusual applications of neoprene to build new products . . . improve old products . . . reduce maintenance costs. Write today for your free subscription. E. I. du Pont de Nemours & Co. (Inc.), Rubber Chemicals Division D-9, Wilmington 98, Delaware.

NEOPRENE
The rubber made by Du Pont since 1932

DU PONT

150th Anniversary
BETTER THINGS FOR BETTER LIVING . . . *through Chemistry*

If you write maker identify as IEN-9570

TRUCK . . Engine driven fork lift, 7½ ton, particularly for yard duty

Source: CLARK EQUIPMENT CO.
Battle Creek 49, Mich.

Cover guard protects operator

Drive power has been increased from 72 to 82 hp. in this new assembly of the company's Yardlift-150 truck, previously described IEN-8374-51. Greater power is obtained from a Hercules 6-cylinder engine at a lower engine speed than in the previous assembly. Travel speed is now maximum at a little over 21 mph. in both forward and reverse.

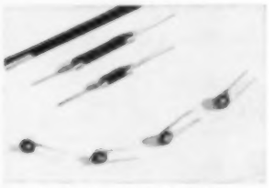
The truck can be operated with a capacity 7½ ton load up a 19 per cent grade. This compares with the previous maximum 15 per cent. The hydraulic steering mechanism has been improved and is now arranged so the truck can be steered manually also. The steering axle is pivoted to maintain contact over uneven floor surfaces.

Overall length is 221 in. with 48-in. forks. Other dimensions are 95 in. in greatest width, 256 in. in extended overall height for a maximum 210-in. fork lift. The truck will turn in 132-in. intersecting aisles and has a 165-in. outside turning radius. Average lift speed is 30 fpm. with a capacity load. The hydraulic pump connected to the engine provides power for the lift and tilt action. A separate hydraulic unit is employed for power steering. Lowest underclearance is 6½ in. at the uprights. It is 12 in. at the drive axle.

If you write maker identify as IEN-9571

RESISTORS . . Miniature units made of silicon carbide ceramic

Source: GENERAL ELECTRIC CO.
Dept. 6X-201, Schenectady 5, N. Y.



Ask for Bulletin GEA-4138C

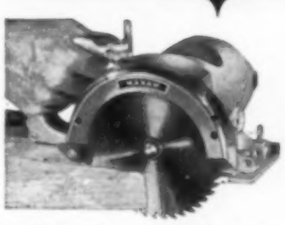
Resistance decreases with increase in applied voltage in the company's line of miniature resistors. Various sizes have been added recently. The line now includes flat units either plain or with wire leads in which the element measures ⅛-in. in diameter and has a maximum continuous rating in free air of 0.1 watt. Also included are ¼ in. rod type units in lengths from 1 to 6 in. and ratings from 0.25 to 1.0 watt. The rod units are capable of continuous operation at 10 kva. on 1-watt rating.

Applications are in circuits to act as stabilizing units for rectifiers, to control voltage selective circuits and for protection against voltage surge. They also can be used as potentiometers with the division of voltage made independent of load current. The material composing the resistor is trade named Thyrite. Its non-linear resistance characteristic is stable and essentially independent of polarity and frequency.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-9572

MAXAW 700
magic ◉ pivot does it!



$ for $ and lb. for lb.
CUTS DEEPER AT 45°

All Ball and Roller Bearing **MAXAW $69.50**

Now you get a heavy-duty industrial saw that weighs only 10 lbs. and cuts 1⅞" at 45° . . . something no other industrial saw with a blade under 7¼" and costing under $115.00 will do. magic • pivot does it! Yes, the simple but long-overlooked magic • pivot engineering achievement puts the pivot point closer to the saw shaft, brings you performance found only in magic • pivot MAXAWS. Hard-biting "Stub-radius" blades stand 3 to 4 more sharpenings . . . last twice as long. The MAXAW does more work . . . faster work . . . and costs less.

Free Pamphlet — Find out what magic • pivot can do for you. Send for Pamphlet 1-92.

Cummins-Chicago Corp.
DIVISIONS
Cummins INDUSTRIALS • Cummins Portable Tools
4740 N. Ravenswood Ave. • Chicago 40, Illinois
IN CANADA: 334 Lowder Ave., Toronto

If you write maker identify as IEN-9573

NEW TYPE QB CIRCUIT BREAKER for NQB Lighting Panelboards

A better circuit breaker panelboard for AC systems. Write for Bulletin 1640. Square D Company, 6060 Rivard Street, Detroit 11, Michigan.

ASK YOUR ELECTRICAL WHOLESALER FOR SQUARE D PRODUCTS

SQUARE D COMPANY

If you write maker identify as IEN-9574

STOP ACCIDENTS with BRADY SAFETY SIGNS

Here's an AMAZING BRAND NEW SAFETY SIGN that will be welcomed by Safety Men! Brady Safety Signs stick to wood, glass, metal, concrete, etc. without moistening. May be applied to any clean surface in a jiffy. No screws, nails, bolts or skilled help necessary. All you do is peel from card, apply where wanted and the sign is up to stay.

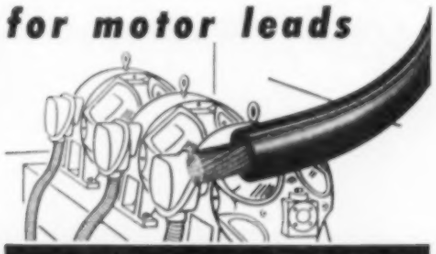
Brady Safety Signs are made of durable cotton cloth, Silicone Coated to resist dirt, grime and moisture. CONFORM TO ASA Standard Z35.1-41. Select your requirements from a complete catalog of standard safety messages. Cost only a few cents per sign. Immediate delivery. Specials made to order.

WRITE FOR Free SAMPLES AND USEFUL CATALOG

MANUFACTURERS OF SELF-STICKING PRODUCTS
SIGN MARKERS • PIPE MARKERS • SAFETY SIGNS • CONTROL ROLL TAPE • MARKERS & LEADERS
W. H. BRADY COMPANY
1655 E. SPRING STREET • CHIPPEWA FALLS, WIS.

If you write maker identify as IEN-9575

for motor leads



...OKOLITE-OKOPRENE

Keep your electrical circuits *strong*, free from weak spots which may disrupt production. On motor leads, and *throughout* your plant circuits, specify Okolite-Okoprene wires and cables. Here's why:

Moisture resistant Okolite Insulation is designed for continuous power loads, three shifts per day, year after year.

Flame resistant Okoprene Sheath protects against abrasion, heat, mechanical damage, oils and acids.

Insulation and sheath are applied by Okonite's strip process and vulcanized in a metal mold, giving greater stability and longer life to both. Write for Bulletin IE-1053, The Okonite Company, Passaic, N. J.

The best cable is your best policy

OKONITE *insulated wires and cables*

If you write maker identify as IEN - 9576

CUT SPRAYING COSTS with CO_2 POWERED GUN

NO HOSES • NO COMPRESSOR • NO ELECTRICAL OUTLETS • NOTHING EXTRA TO BUY!

BECKER
PRESSURE-TYPE
SPRAY GUN
USED EXTENSIVELY IN FACTORIES, HOMES, FARMS, INSTITUTIONS

For:
- Paints
- Oils
- Varnishes
- Enamels
- Fire-Proofing
- Decorating

Handy for hundreds of industrial uses where expensive, heavy, cumbersome compressor type spraying is unnecessary. Becker Spray Gun is ruggedly built; heavy gauge (21 liquid oz.) steel container, cast aluminum head, brass and stainless inserts. Powerful CO_2 cartridges spray up to one container-full. See your Distributor or order direct, postpaid. Extra CO_2 cartridges at your dealer's or 10 for $1 postpaid.

SULLIVAN-BECKER CO., Dept. 192-J, Kenosha, Wis.

If you write maker identify as IEN - 9577

The DRY SCRUBBER with the *Self-Sharpening* BRUSH FEATURE

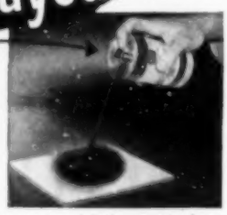
Just flip the switch! That reverses the motion of the brushes of the *Finnell* Dry Scrubber and re-sharpens them automatically. Eliminates the need for frequent changing of brushes by hand in order to maintain a good cutting edge. This heavy duty *Finnell* cleans grease-caked floors in about *one-tenth* the man-hour time required when hand-spudding, and is far more thorough. Floating brush rings enable the two powerful scarifying brushes to get into indentations and grooves that rigid coupling brushes pass over and miss. The machine is adaptable to wet scrubbing, steel-wooling, waxing, and polishing. For free floor survey, consultation, or literature, phone or write nearest *Finnell* branch or Finnell System, Inc., 209 East Street, Elkhart, Indiana.

FINNELL SYSTEM, INC.
Inventors of Floor Scrubbing and Polishing Machines
BRANCHES IN ALL PRINCIPAL CITIES

If you write maker identify as IEN - 9578

Now Spray On design layout ink

"JUST PRESS THE BUTTON ON THE CAN"



Faster! Easier!

No brush, no waste, no mess! Self-pressurized can sprays on CROWN Design Layout Ink in fine mist that dries to hard surface in a minute. Dark blue is standard—other colors on volume purchases.

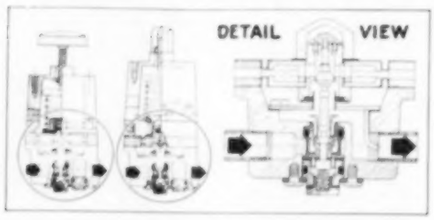
ORDER TODAY!
$1.59 PER 12-OZ. CAN
-15% discount in cases of 12
Additional discount for large quantities
FOB Sycamore, Illinois

CROWN INDUSTRIAL PRODUCTS CO.
402 Borden Ave., Sycamore, Ill.
Please ship at once
_____ (how many?) cans
_____ (how many?) cases
CROWN Design Layout Ink
Name _____
Company _____
Our Purchase Order No. _____
Address _____
City _____ Zone _____ State _____

If you write maker identify as IEN - 9579

VALVE . . Diaphragm operated, manual and pneumatic loading control

Source: **KENDALL CONTROLS CORP.**
148 Moody St., Waltham 54, Mass.



Single units list at $50

Loading spring for manual adjustment supplements the pneumatic control loading in this special design of the company's new air volume booster, IEN-9561 this issue. The spring permits setting an initial pressure to act with additional air control for quick air supply and equally quick relief through the flow port of the ¼-in. valve.

The assembly is available in two arrangements with reference to inlet for the pneumatic loading pressure. In one, to the left, this pressure is connected into the spring chamber and same-size diaphragms are employed as in the standard design of the Air Volume Booster. Resulting action is direct and opens the valve to pressure flow on control pressure increase.

Reverse action is obtained in the assembly to the left by introducing the pneumatic control pressure above the Booster diaphragms but below a third diaphragm of greater area. This causes the air to act in opposition to the spring. Application is in operation of double-diaphragm control valves and in reversing pneumatic instrument signal outputs so a 3 to 15-lb. signal will result in a 15 to 3-lb. output through the reversing valve. Overall height of the assembly is about 6¾ inches. Both employ Bellofram diaphragms, IEN-9523 this issue.

If you write maker identify as IEN - 9580

FURNITURE . . Combination assembly of steel drawers and steel work bench

Source: **STANDARD PRESSED STEEL CO.**
Box No. 732, Jenkintown, Pa.

As you want it

Illustrated is a new combination of the company's previously developed steel drawer units and steel work bench. It is representative of assemblies that can be made with the standard stock units. The drawers are available in three standard sizes measuring 14 by 15 in. and 14 by 20 in. in width and length by 5 in. in depth and 20 by 20 in. by 6 in. in depth. A base matches the drawer dimensions. The bench is supplied for assembly on the job. It includes standard legs, braces and a top in various designs.

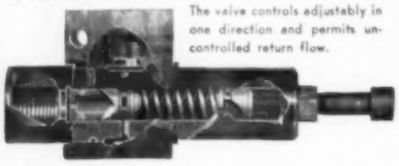
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9581

An Adjustable
FLOW REGULATOR

This newly perfected adjustable Flow Regulator holds at a constant rate even though the pressure fluctuates.

The valve controls adjustably in one direction and permits uncontrolled return flow.



The spring back piston in the housing is mounted in front of the adjustable screw. It carries a calibrated orifice; operates axially on change in inlet pressure so as to increase the throttling action.

Four sizes, ¼, ⅜, ½, and ¾ inch. Overall length 4½ to 7½ inches. Adjustable over a 50% flow range. Maximum pressure is 3000 pounds.

Write for illustrated circular.

WATERMAN ENGINEERING Company
725 CUSTER AVENUE
EVANSTON, ILLINOIS

If you write maker identify as IEN - 9582

It's for You!

HOW TO
★ *Save Time*
★ *Save Floor Space*
★ *Reduce Handling Costs*

all in this FREE BULLETIN

On-the-job photos demonstrate the many advantages of the Nutting Jack and Skid System. It is easy and inexpensive to install — and is so flexible to varying plant layouts that there is scarcely a materials handling problem to which it cannot be profitably applied.

SEND FOR YOUR COPY OF BULLETIN 48-JS NOW

SINCE 1891 **Nutting TRUCK AND CASTER CO.**
2013 DIVISION ST., W., FARIBAULT, MINN.

If you write maker identify as IEN - 9583

CAPCO DOCK COVERS OFFER YEAR 'ROUND PROTECTION

Can be installed inside or outside of dock door . . . models for various purposes

SOLD AT A LOW COST

. . . and the cost is especially low because it pays for itself many times . . . saves time and money over many years.

- PREVENTS ACCIDENTS
- ONE MAN CAN OPERATE
- FIREPROOF
- WATERPROOF
- DURABLE — LONG LIFE
- DEPENDABLE

BEAT THE BAD WEATHER

CAPCO Dock Covers completely enclose the space between car and building doorways, protecting loading and unloading during bad weather. Recommended by safety engineers. No more wet merchandise in the rain . . . no more interruption during winter. Here's your insurance against loss of either heat or refrigeration; you have practically the same as indoor loading.

CAPCO

Be sure to write for illustrated literature and prices

622-24 PROSPECT AVENUE • KANSAS CITY 1, MISSOURI

If you write maker identify as IEN - 9585

HERE IS A COMPACT DURABLE CHEMICAL TRANSFER PUMP FOR HANDLING PROCESS LIQUIDS

HIGH QUALITY
EASILY SERVICED

PEERLESS TYPE CTB PUMP

PEERLESS PUMPS

TYPE CTB CHARACTERISTICS
HEADS: 10-140 ft.
CAPACITIES: 10-250 gpm
HP RANGE: 1-10 hp
LIQUID TEMPERATURE: up to 250° F

Liquid End Made of Type #20 Stainless Steel Alloy

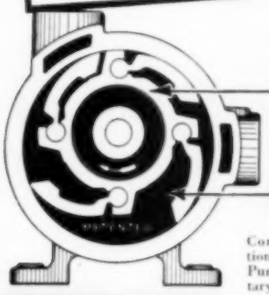
Handles corrosive and abrasive liquids at moderate temperatures and pressures. Write today for Peerless pump Bulletin No. B-1606. Profusely illustrated with pump views, sectional drawings, elevations and dimensions. Contains complete head-capacity data and details of Peerless construction.

PEERLESS PUMP DIVISION
FOOD MACHINERY AND CHEMICAL CORPORATION

Los Angeles 31, California and Indianapolis 8, Indiana
Offices: New York, Chicago, St. Louis, Atlanta, Dallas, Plainview and Lubbock, Texas, Fresno, Los Angeles, Phoenix, Albuquerque, N. M., Tulsa

If you write maker identify as IEN - 9586

LEIMAN AIR PUMPS GIVE YOU *Greater Capacity!*



SMALLER PISTONS *provide* LARGER AIR SPACE

HINGED WINGS *take up their own wear*

Compare this cross-section of a Leiman Air Pump with any other rotary air pump. It is the working air space that counts—and Leiman provides 2 to 3 times more area, per size and weight of pump.

Handle air pressure, vacuum or suction jobs with much smaller Leiman Rotary Air Pumps. You save weight and space—run at lower r.p.m.—have fewer moving parts—no springs, gaskets or packing—no tips to renew—nothing to give trouble. Leiman patented leak-proof hinged wings maintain fully-rated pressure or vacuum for years and years.

What is your air application?

Send us details. Leiman engineers offer over 60 years' experience with thousands of air applications.

Catalog and Application Data sent on request

For Pumps—write DEPT. A

LEIMAN *Rotary* AIR PUMPS (Pressure — Vacuum)

Metal Cleaning and Finishing without acids or scratch brushes

Fast, low-cost, safe, uniform!

LEIMAN SANDBLASTS

Clean up scaly, rusty, rough surfaces—prepare better surface for plating, enameling or painting—stencil letters and designs—more rapid matte or satin finishes. Use unskilled help. Many models, treadle or automatic.

For Sandblasts—write DEPT. B

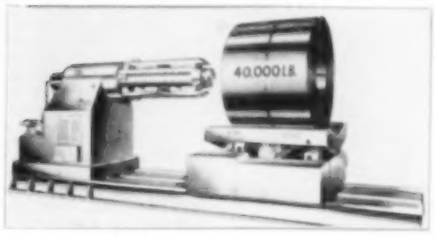
LEIMAN BROS., Inc. 166 Christie Street Newark 5, N. J.

AIR PUMPS · AIR MOTORS · SAND BLASTS · DUST COLLECTORS

If you write maker identify as IEN - 9588

HANDLING . . Motor driven reel feeds strip stock to a machine

Source: F. J. LITTELL MACHINE CO.
4133 Ravenswood Ave., Chicago 13, Ill.



Anti-friction bearings take the load

Three sizes, rating 5, 10 and 20 tons, are available in a new line of automatic centering reels to hold a coil of strip stock and to rotate it for feed to a machine. The reel is characterized by its hydraulically expanded mandrel type spindle and by its vertically adjustable loading car to transfer coils between storage and the reel.

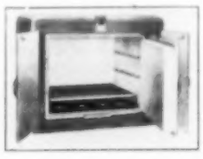
Expanding action is by means of mechanically interlocked rams between the ball bearing spindle and the radially acting arms. These rams move the arms in and out, holding them parallel with each other, as the spindle is advanced or retracted by the action of a hydraulic motor at the frame end of the spindle. This motor is powered by a hydraulic pump and electric motor mounted on the housing. The loading car rides a track that can be extended to the storage area. Stops on the arms can be set adjustably to locate the load laterally.

The three sizes in the line will hold coils ranging from 24 to 28 in. in inside diameter and will swing coils measuring 54 to 72 in. in diameter, the latter with a 6 in. spacer under the housing of the largest machine. Maximum coil width is 48, 66 and 90 inches. The reel-rotating motor is a variable speed unit for control by a "dancer" roll to keep the unwinding speed in step with need for the material at a machine.

If you write maker identify as IEN - 9589

HEATING . . Portable electric oven for range between 300 and 1,000 deg. F.

Source: GRIEVE-HENDRY CO.
1103 N. Pauline St., Chicago 22, Ill.



A little heat quickly

Tubular elements sheathed in Inconel are employed as the heat source in this new Model HT-2 electric oven. It is equipped with thermostat control and has a stainless steel interior that measures 22 by 18 by 16 inches. Outside dimensions are 30 by 25 by 24 inches. Operation is on 220-volt single-phase ac.

The oven can be set up at any desired location and moved as required for operations such as baking, drying, preheating, stress relieving. Two or more units can be employed together. Individual ovens in a group can be operated at different temperatures. The steel housing includes 4 in. or more of Fiberglas insulation. Double doors seal heat in at the front. A drip pan, one shelf, a pilot light and a thermometer are standard. Additional shelves and a timer can be specified.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9590

A SAFETY PRESCRIPTION WORKERS TAKE . . . AND LIKE!

McDonald LEAD HOOD!

. . . newer, surer defense against lead dust and fumes such as encountered in grinding operations.

Uncomfortable safety equipment is bad medicine for safety programs. Why not sugar-coat protection with super-comfort?

Made of lightweight aluminum . . . head-balanced with size-adjustable hammock headgear . . . U.S. Bureau of Mines-Approved McDonald Lead Hood provides comfort men want! Top safety they need!

McDonald Lead Hood's plastic-coated cape plus muslin under-collar give double-seal security against lead dust and fumes. Its new Air Flow Control Valve—with quick-change chemical cartridge filter—assures constant, always ample air supply.

Similar hoods available for Shot and Sandblasting.

Write for Bulletin and Prices

1932 - 1952
"20 YEARS OF PROGRESS"

B. F. McDONALD CO.
Manufacturers & Distributors of Industrial Safety Equipment
5721 WEST 96TH ST., LOS ANGELES 45, CALIF.
Other Offices in San Francisco & Houston

If you write maker identify as IEN - 9591

INDUSTRIAL INKS To Mark Anything!

Whatever the substance, Phillips has an ink to mark it permanently and legibly—or can make one. Marking experts insist on "Clear Print" Wood Block Stamp Pads and Opaque Inks. They get clear, sharp, fast-drying impressions. Also inks for brush, pen, stencil or machine application available in a variety of colors and quantity containers.

★ Quick Laboratory Service On Your Problem Markings

★ To Permanently Mark . . . Metals, Plastics, Glass, Wood, Paper, Leather, Ceramics—glazed, varnished or lacquered surfaces and virtually every other known material.

E. A. PHILLIPS, President
PHILLIPS PROCESS CO. INC.
192 MILL STREET
ROCHESTER 14, N. Y.

If you write maker identify as IEN - 9592

New FEDERAL Smooth-Air Clutch and Electro-Pneumatic Controls give

JET SPEED TO PRESSWORK!

These new Federals give "jet speed" to presswork. With the new Smooth-Air Clutch and Electro-Pneumatic Controls, speeds may be increased safely, without damage to work and without sacrificing precision. Operation is simpler. May be "inched", single tripped, or operated continuously. Sizes 6 to 60 tons. Also standard and dial feed models. Prompt delivery. Write for catalog.

THE FEDERAL PRESS CO.
503 Division Street, Elkhart, Indiana

FEDERAL Stamping Machinery PRESSES
27 YEARS OF QUALITY CONSTRUCTION

If you write maker identify as IEN - 9593

NoDrip ...STOPS CONDENSATION DRIP!

NoDRIP PREVENTS RUST in addition to stopping drip and keeping floors dry.

ANYONE CAN APPLY

Brush, trowel or spray NoDrip on tanks, condensers, suction lines, vats, pipes, walls, ceilings, etc. NoDrip adheres to metal, concrete, brick, plaster. It forms a seamless covering that is effective as soon as dry. Acid, alkali and brine resistant.

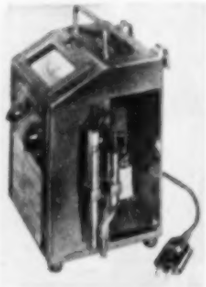
Interesting 32-page Handbook shows what NoDrip is and what it does. It's free. Send coupon today.

☐ SEND NoDRIP HANDBOOK
NAME
COMPANY
ADDRESS
CITY STATE

J. W. MORTELL CO., 510 BURCH ST., KANKAKEE, ILLINOIS
TECHNICAL COATINGS SINCE 1895

If you write maker identify as IEN - 9594

THE CAMBRIDGE INDUSTRIAL MODEL DIRECT READING pH METER



- Operated from any AC outlet
- Completely portable. Weighs only 10 lbs. Electrodes are integral parts of the instrument.
- Accurate to .10 pH.
- Shielded glass electrodes permit use of electrodes at any distance from the instrument.
- May be used on a bench or wall mounted.
- Self contained in one metal case including electrodes and buffer solutions.
- Extremely stable.
- Automatic temperature compensation.

Send for bulletin 910-NA.

Also available: Electron-Ray Research Model accurate to .02 pH and Laboratory Model accurate to .05 pH and Single- and Multi-point recorders.

CAMBRIDGE INSTRUMENT CO., INC.
3710 GRAND CENTRAL TERMINAL NEW YORK 17, N. Y.
Pioneer Manufacturers of
PRECISION INSTRUMENTS

If you write maker identify as IEN - 9595

JEFFREY
ESTABLISHED 1877
THE JEFFREY MANUFACTURING CO.
914 Fourth St., Columbus 16, Ohio

If you write maker identify as IEN - 9596

Here's the money-saving way to speed car handling

YOU can move cars at a moment's notice when you have a Link-Belt Car Spotter. One man, using a Link-Belt Car Spotter with motor-driven capstan, can easily move up to six loaded railroad cars at a time. Faster loading and unloading minimizes demurrage charges. Link-Belt Car Spotters are built in two sizes with 5 or 10 hp, integral or separate motors, stationary or portable.

Link-Belt's Book No. 2092 describes complete line of car spotters and drum-type pullers.

Get this NEW BOOK

LINK-BELT CAR SPOTTER

LINK-BELT COMPANY
Dept. 21, 307 N. Michigan Ave., Chicago 1, Ill.

If you write maker identify as IEN - 9597

CONTROL . . Electronic instrument holds temperature in adjustable range

Source: THERMO ELECTRIC CO.
22-04 Raphael St., Fair Lawn, N. J.

Ask for Bulletin L-10009

Rapid detection and quick corrective action on any deviation from a predetermined temperature are provided by this new signaling temperature controller, Model L-10000. It is actuated by a temperature sensing element in the form of a protected electrical resistance forming one leg of a wheatstone bridge.

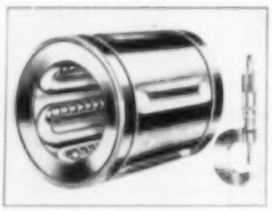
Unbalance in this bridge is amplified and applied at a pilot relay to close or open a heating element circuit, to start or stop a motor, to open or close an electrically operated valve and also to signal at red and green lights on the instrument door. Action results on temperature deviation minimum at 0.1 deg. F. from the control point setting. Accuracy is within 0.25 per cent of scale range.

The assembly is in a steel housing with a gasketed aluminum door. Overall dimensions are 10 by 9 by 12 inches. Six ranges are available to specification between 0 and 600 deg. F. in five steps with one from minus 100 to plus 100 deg. F.

If you write maker identify as IEN - 9598

BEARING . . Ball assembly for linear movement on round shafts

Source: THOMSON INDUSTRIES INC.
1027-31 Plandome Road, Manhasset, N. Y.



Ball rides in closed loops

New size for 2½-in. shafts has been added to the company's Ball Bushing, previously described IEN-8660-49. The new heavy duty unit supplements assemblies previously available for ¾ to 1½ in. shafts. As in the previous design, the balls ride in tracks to support linear movement.

Linear freedom is not dependent on the presence of an exposed oil film as in the case of a plain bearing or sliding bushing. Inaccuracies due to variations in oil film thickness are not factors when the new Ball Bushing is used. The load is taken by parallel lines of balls riding in closed loops in which one side supports the load and the other is at a greater radial distance to clear and act as a return track to the entering end of the load carrying line.

identify as IEN - 9599

Hewitt-Robins reports development of a new compound and start of manufacture of hose based upon it to handle concentrated organic and inorganic acids, except nitric and sulphuric which are limited to 75 and 98 percent respectively. The hose will be suited also to handle chlorine.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9600

Pre-heat Gap Press used in molding All-Plastic Printing Plates. Arrows indicate position of 14", Model "C" NOPAK Cylinder and 2 NOPAK 4-Way Valves.

18 Ton Platen Pressure Produced by NOPAK Cylinder

This Pre-heat Gap Press is constructed expressly for the efficient molding of All-Plastic Printing Plates . . . by the Ostrander-Seymour Company, Chicago. 18 Ton Platen Pressure is generated by a 14" NOPAK Model "C" Air Cylinder, working at 100 P.S.I. line pressure, through toggle leverage. The upper platen, equipped with heating coils, is pulled down onto the work.

A NOPAK 3", Model "E" Cylinder operates the sliding, loading apron which positions the work under the platen. Each cylinder is controlled by a NOPAK ⅜", 4-Way Valve.

This is a typical example of how NOPAK Valves and Cylinders are used for the efficient application and control of air or hydraulic power. Others are shown in the NOPAK Application Manual. Ask your NOPAK representative.

GALLAND-HENNING MFG. CO., 2760 S. 31st St., Milwaukee 46, Wis.

Refer to Sweet's File for Product Designers, or write for Bulletin SW-1.

Representatives in Principal Cities.

NOPAK VALVES AND CYLINDERS
DESIGNED for AIR and HYDRAULIC SERVICE

If you write maker identify as IEN - 9601

Here's the right iron for EXTRA HEAVY DUTY SOLDERING

Super-powered at 700 WATTS!

The ideal Iron for heavy soldering and large branders. 700 watts with tip 1¼ inches in diameter. Heavy duty construction from tip to cord terminal. Rugged long-life heating element with case made from solid hexagonal steel for extra strength. Operates on any cycle AC or DC current; Furnished for either 110 or 220 volts.

HEXACON MODEL 700
$30.00

An Iron for Every Soldering and Branding Need

There is a quality made Hexacon Iron for every use in manufacturing or repair work. Hexacon irons include screw tip, plug tip and hatchet types with tip diameters from ⅛" to 1¼"—from 25 to 700 watts. Write for illustrated catalog.

HEXACON

HEXACON ELECTRIC COMPANY
188 WEST CLAY AVE. • ROSELLE PARK, NEW JERSEY

If you write maker identify as IEN - 9602

Speed up INPLANT HANDLING

Clamp jaws hold boxes firmly in place. Clamps are opened for release and closed for gripping with a convenient foot pedal. Rugged construction, ball-bearing, rubber-tired wheels. Models for all purposes. Illustration shows Universal model with tilting frame. For bulletins address Dept. D.

fmc CLAMP TRUCKS

FOOD MACHINERY AND CHEMICAL CORPORATION
PACKING EQUIPMENT DIVISION
Riverside, California • McAllen, Texas NM-8

If you write maker identify as IEN - 9603

SAVE TIME AND MONEY WITH LUG-ALL HOISTS

LUG-ALL FEATURES

The Lug-All Winch Hoist has a safety handle to prevent accidental overload. Has oiled-for-life bearings and stainless steel springs. Pre-formed aircraft cable made of 133 strand wire.

1 YEAR GUARANTEE

Order today.

". . . LUG-ALL IS THE BEST HOIST I EVER USED IN 30 YEARS." IN-DIANA SUPERIN-TENDENT* SAYS HIS MEN PREFER THE LIGHT-WEIGHT LUG-ALL HOIST.

The LUG-ALL Winch Hoist is handy for pulling wire in conduit, shifting motors and heavy equipment, opening bonnet doors. It is excellent for heating and plumbing service work and is useful in tight places.

Maintenance superintendents like its light weight (less than 10 lbs). The LUG-ALL lifts, lowers or pulls 1½ ton a distance of 5 ft.; ⅜ ton a distance of 10 ft. The LUG-ALL has 3 swivel hooks plus a built-in pulley block. The handle is reversible and can be removed to provide a tamper-proof load-binder.

The LUG-ALL can be reversed, has free-wheeling under no-load conditions, and double interlocking pawls for positive locking.

It costs

ONLY $35.25 FOB Factory

Order your first LUG-ALL today; or write for Bulletin #107 giving full facts on this money saving tool.

THE LUG ALL COMPANY
WYNNEWOOD 3, PENNA. *Name on Request.

If you write maker identify as IEN-9604

Efficient Small Packaging Demands Adequate Equipment . . .

When excessive costs are present in small packaging operations something is wrong. In any packaging operation rule out extra product trimming . . . double check-weighing . . . multiple handling. All are unnecessary operations and they increase labor costs, waste time, prevent full volume output. In this type of packaging EXACT WEIGHT Scales stop many of these waste motions simply because the equipment weighs and checks a package, can or carton in one fast operation. You have exact weights at low cost, speed up production and increase output materially. The fact that EXACT WEIGHT scales are in constant use in hundreds of industrial packaging tasks, coast to coast, is proof of their soundness, trouble-free operation, long life and accuracy. Write for details for your small packaging task.

EXACT WEIGHT SCALE Model No. 273 for counting, testing, production line check-weighing. Features end-lever construction, speed of operation—Capacity 12 lbs.

EXACT WEIGHT SCALES
Industrial Precision

THE EXACT WEIGHT SCALE COMPANY
932 W. Fifth Avenue, Columbus 8, Ohio
2920 Bloor St., W., Toronto 18, Canada

If you write maker identify as IEN-9605

Which Do You Choose SAFETY *or* RISK?

Compare the Advantages of Modern Scaffolds Over Block and Tackle!

GOLD MEDAL MIDGET Safety Swinging Scaffolds

- ✓ Light, compact, easy to rig.
- ✓ ¼" *steel* wire rope, wound on drum, eliminates dangerous hitches.
- ✓ Machine positively locked three ways to prevent slipping or running down. Stirrup *bolted* to operating mechanism.
- ✓ One man can carry a Midget Machine.
- ✓ A Midget offers built-in safety in every way.

Scaffold Falls, 2 Hurt in Plunge

Two cement finishers were seriously injured Tuesday when a scaffold collapsed, tumbling them 25 feet to the street.

The accident occurred when the tackle on a block and tackle slipped as the men worked on a three-story garage at [illegible]

BLOCK AND TACKLE Scaffolds

- ✗ Heavy, bulky.
- ✗ Bulky coils of rope tangle easily. Manila rope subject to rapid deterioration.
- ✗ Tying and untying hitches is always dangerous. Cradle iron not securely fastened to tackle.
- ✗ Large bulky coils of rope require constant inspection, as well as extra handling and storage space.
- ✗ Danger is always present in this type equipment.

LADDERS AND SCAFFOLDS FOR ANY PURPOSE
. . . . Any Place . . . . Any Time

Get Greater Safety...Efficiency...Economy
THE PATENT SCAFFOLDING CO., Inc.
38-21 - 12th Street, Dept. IEN, Long Island City 1, N. Y.
West Coast Plant: 6931 Stanford Ave., Los Angeles

If you write maker identify as IEN-9607

DRIVE . . Pressed steel sheave, A and B belts, single groove design

Source: NELSON MFG. CORP.
2258-62 Scott Lake Road, Pontiac 12, Mich.

List price ranges from 45 cents to $7

A new series of pressed steel sheaves for A-section V-belts with ½-in. groove and a corresponding series for B-section belts with a ⅝-in. groove have been standardized in the company's line which previously has been available only to order. Pitch diameter ranges from 1.200 to 15.700 in. with maximum bore at ½ to 1 7/16 in. for the A-section. It measures 2.10 to 13.60 in. with maximum bore at ¾ to 1 7/16 in. for the B-section line. Keyways can be specified. Each sheave has a set screw.

If you write maker identify as IEN-9608

HARDBOARD . . For product use and construction, lengths to 16 feet

Source: MASONITE CORP.
109-13 W. Washington St., Chicago 2, Ill.

Cuts without material waste

Previous maximum of 12 ft. has been increased to 16 ft. and 4 by 16-ft. panels are now available in the company's Hardboard lines. These include standard and tempered Presdwood, Panelwood, Temprtile, Leatherwood, standard and tempered Duolux. Thicknesses are ⅛, 5/16 and ¼ in. over the line with certain of the materials available in one of these thicknesses and others in all three. The company also offers its Duolux panels in 5-ft. width and in length measuring 8 or 16 ft. or combinations totaling 16 feet. Thicknesses are ⅛ and 5/16 inch.

If you write maker identify as IEN-9609

HANDLING . . Aluminum drum, cover and dolly for food products

Source: ALUMINUM COOKING UTENSIL CO.
51 Wear-Ever Bldg., Dept. 69, New Kensington, Pa.

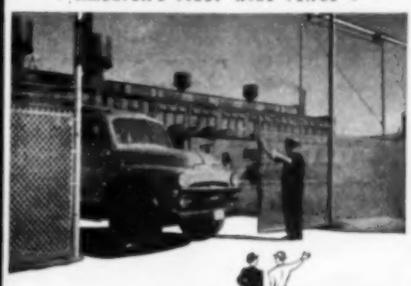
Sanitary construction characterizes the design of this new 50-gal. drum with its solid construction, open head, continuous weld, and bottom floor-contacting ring. Overall dimensions are 23¾ by 28¼ inches. Handles can be specified with either of two covers, a slip-over type and a hinge type as shown in the illustration.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 90

If you write maker identify as IEN-9610

PAGE FENCE *Since 1883*

• AMERICA'S FIRST WIRE FENCE •



Sabotage is a danger which calls for vigilance day and night. Property line vigilance is the job for Page Chain Link Fence, now as it has been for more than 60 years. Consult the nearby, long-experienced Page Fence engineering and erecting firm, which will submit cost estimates without obligation. Name and address will be sent with illustrated fence data on request.

Write to PAGE FENCE ASSOCIATION in Monessen, Pa., Atlanta, Bridgeport, Chicago, Denver, Detroit, Los Angeles, Philadelphia, New York or San Francisco.

PRODUCT OF PAGE STEEL & WIRE DIVISION OF AMERICAN CHAIN & CABLE COMPANY, INC.

If you write maker identify as IEN-9611

SPEED UP SMALL PARTS ASSEMBLY

Parts feed automatically toward front—end reaching and fumbling.

Bins taper toward front to form convenient semicircle—keep all bins within easy reach.

Stacking, locking construction for rigid set-ups, easily changed when necessary.

All-welded construction. Smooth, folded edges.

New design, adjustable hoppers provide increased capacity and permit regulated flow of parts according to sizes and weights.

Two sizes—tapered or straight sides.

IMMEDIATE DELIVERY

Manufactured and sold in Canada exclusively by Wickware-Stackbin, Ltd., Ottawa

Write Stackbin Corp., 1077 Main Street, Pawtucket, R. I.

STACKBIN SYSTEM
"Stacked and Still Accessible"

If you write maker identify as IEN-9612

The motor's not just connected, it's mated to the pump

The Worthington monobloc DN centrifugal pump has pump and motor mounted on *one* shaft—perfectly "mated" for compactness and rigidity.

It's all one unit—no base plate; no extra foot supports to contend with.

The same pump—with conventional stuffing box or mechanical seal—also comes in frame mounted CN models.

Capacities 10 to 1,800 gpm.

Worthington Corporation, formerly Worthington Pump and Machinery Corporation, Pump and Compressor Merchandising Div., Harrison, N. J.

PC.3.4

WORTHINGTON
Standard pumps

If you write maker identify as IEN-9613

If you're working with alloy steels, here's a new Frasse chart you can't afford to be without. With it you can identify a steel requirement in less than 30 seconds—save time normally spent hunting through "specs."

The chart, compiled by Frasse Technical Service, shows chemical analysis requirements for each of 70 Military, Army, Navy, Aeronautical, and Federal specifications. Also lists specified forms (sheets, bars, etc.) and nearest corresponding SAE, AISI and AMS type numbers.

You can tack it on the wall, file it in your desk drawer, or slip it under glass for ready reference. Send for your free copy of this handy chart today.

Call FRASSE 1st for Alloy, Stainless and Carbon Steels

Peter A. FRASSE and Co., Inc.
17 Grand Street, New York 13, N. Y.
Lyndhurst • Philadelphia • Buffalo • Syracuse

If you write maker identify as IEN-9614

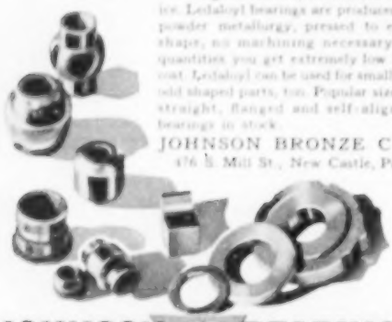
Great MONEY-SAVERS where applicable . . .

Ledaloyl bearings and parts

Write for Johnson Catalog

IN the right application, they give low cost, trouble-free service. Ledaloyl bearings are produced by powder metallurgy, pressed to exact shape, no machining necessary. In quantities you get extremely low unit cost. Ledaloyl can be used for small and odd shaped parts, too. Popular sizes of straight, flanged and self-aligning bearings in stock.

JOHNSON BRONZE CO., 476 S. Mill St., New Castle, Pa.



JOHNSON B BEARINGS *Sleeve-Type*

If you write maker identify as IEN-9615

GAST rotary air compressors ATOMIZE FUEL OIL UNIFORMLY for "Powermaster" Steam Generators

SEND FOR CATALOG 19 LOOSE LEAF FILE

Gast Application Bulletin Booklet showing 24 design problems solved sent upon request.

PROBLEM: Select a compressor to supply uniform, pulseless air volume for atomizing fuel oil in the combustion chamber of Orr & Sembower "Powermaster" Boilers.

SOLUTION: Three sizes of Gast Rotary Air Compressors proved excellent for boilers of 50, 100 and 150 H.P. Gast Rotary Vane Design delivers positive, pulseless pressure from 18 to 22 psi and displacements to 22 cfm — without a bulky pressure tank.

RESULT: Positive air volume pulverizes every droplet of fuel oil. Long, trouble-free performance results from ball-bearing compressors with automatic lubricator, intake filter, cooling fins and fans.

ONCE AGAIN you can see how Gast Rotaries — plus concentrated experience with air power, low vacuum and pressure — helped solve a specific problem. Have you considered the advantages of Gast Rotaries on your product? Write us, outlining your problem, — you'll receive prompt cooperation. "Air may be your Answer!"

Original Equipment Manufacturers for Over 30 Years

GAST rotary AIR MOTORS · COMPRESSORS · VACUUM PUMPS

GAST MANUFACTURING CORP., 110 Shelby St., Benton Harbor, Mich.

If you write maker identify as IEN-9616

Automatically SOUNDS SIGNALS, OPERATES EQUIPMENT ON ACCURATE SCHEDULES

Montgomery PROGRAM CLOCKS & INDUSTRIAL TIMERS

Program clocks for automatic control of signal systems, governing work periods, permitting manual operation for special programs or emergency alarms without affecting accuracy of pre-set schedule.

Industrial timers start and stop equipment automatically to a pre-set schedule. Wide application for shop and laboratory operations. Special timing equipment engineered to your requirements.

Request free specification and data sheets

MONTGOMERY MANUFACTURING CO., Owensville 8, Ind.

Please send free Industrial Timer data sheets

Name ____

Position ____ Company ____

Address ____ City ____ State ____

If you write maker identify as IEN-9617

BENDING . . Hand machine, steel bar to 1 in., tube to 1¼ in.

Source: O'NEIL-IRWIN MFG. CO. 547 Eighth Ave., Lake City, Minn.

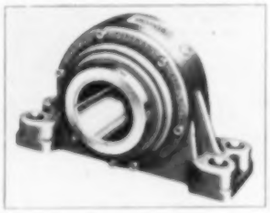
Operator points at ratchet and uses it

Chain ratchet employed on this new No. 4 machine in the company's Di-Acro Bender line can be engaged to give the operator a 4 to 1 leverage, as compared to direct pull, for work that shows unusual resistance to bending. He can disengage the ratchet when the resistance is light. The machine can be set up for simple or compound bends to be made one at a time on radius to 12 inches. Accessories include equipment to handle tube, structural shapes, extrusions, strip stock, bus bars, round or square rod.

If you write maker identify as IEN-9618

BEARING . . Pillow block, self-aligning, roller bearing design

Source: DODGE MFG. CORP. 500 S. William St., Mishawaka, Ind.



Radial and thrust loading

The company announces start of production of its new Dodge-Timken steel pillow block to cover a range of shaft sizes from 2 7/16 to 10 inches. Delivery dates for given sizes and quantity will be quoted upon application.

The bearing is provided with a spherical self-aligning outer race and is available in types that provide for expansion or that lock the shaft. Double piston rings seal the lubricant in and keep dirt out. Sealed assembly is permanent whether the bearing is on or off the shaft. Each unit is shipped permanently adjusted, lubricated and sealed ready to install.

identify as IEN-9619

Comer springs are produced in large quantity and in closely similar small sizes and general appearance for one of the company's customers. It has been difficult to tell them apart or to keep them separate. Now the company dyes each spring type a distinctive color and packages it in double-wall transparent cellophane bags. Size of the bag tells the number of springs it contains. Assemblers in the customer's plant need only to look at the bags to pick the springs needed for a given job.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-9620

SPEEDY AIR VISE

SPEEDS UP ✓ MILLING ✓ PUNCHING ✓ DRILLING ✓ BENDING ✓ TAPPING ✓ RIVETING

FOOT CONTROLLED!

GRIPPING FORCE 15 TIMES AIR LINE PRESSURE

Speedy Air Vise helps you do dozens of operations faster, better, cheaper—*by air pressure!* Foot control valve opens and shuts vise instantly, leaving *both* hands free to produce more. Jaw opens up to 3 inches, holds castings, parts, jigs, etc. Compact and trouble-free.

Complete with Foot Control, Air Hose and Fittings . . . . . only **$29.90**

Prompt Delivery from Your Supplier or Write Direct

W. R. BROWN CORPORATION • 2645 N. Normandy Ave., Chicago 35, Ill.

AIR REGULATORS • AIR FILTERS • AIR GUNS • PORTABLE COMPRESSORS

If you write maker identify as IEN-9621

Here's Controlled Rate of Flow

Model F-22 feeding ground clay materials at 25 tons per hour to a pug mill and press.

SYNTRON *Vibra-Flow*

VIBRATORY FEEDERS

Provide a smooth, even and controllable flow of most types of bulk materials — at the turn of a dial, rates from pounds to hundreds of tons per hour at efficient low cost operation.

Write for free Illustrated Catalog Folder

SYNTRON CO. 410 Lexington Ave. Homer City, Pa.

If you write maker identify as IEN-9622

SYNTRON *THIN — FLAT*

ELECTRIC HEATING ELEMENTS

For rapid, uniform heating of plates, pipes, platens, kettles, tanks, ovens, dies, dryers and ducts, by direct or indirect immersion or contact.

Available in two widths—in lengths from 9" to 124" and in most any volt and watt combination, the latter depending upon the application.

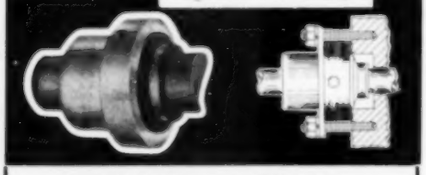
Can be furnished in various shapes—both their design and construction lend to flexibility in forming.

Write for literature — or send us the details of your heating problem.

SYNTRON CO. 410 Lexington Ave. Homer City, Pa.

If you write maker identify as IEN-9623

For "SLURRY" Problems apply SYNTRON



SHAFT SEALS with Flush Connection and Abrasive Excluder

Provide Positive, Long-Life Sealing of Abrasion Laden Liquids

If you are experiencing leakage, shaft wearing conditions, gland adjustments or high maintenance costs in the handling of slurry laden liquids — you can eliminate all of these with Syntron Shaft Seals . . . self-contained, self-lubricating units.

Write for FREE Catalog Folder

SYNTRON CO. 410 Lexington Ave. Homer City, Pa.

If you write make identify as IEN - 9624

for *Complete* Hopper Efficiency

SYNTRON

1. Hopper Level Switches

Eliminate spillage and shortage of materials. Automatically maintain desired levels of materials—from fine to coarse—in bins and hoppers. Control feeding.

2. Electric Vibrators

Assure free-flowing bins, hoppers and chutes. Eliminate arching and plugging of materials without hammering and rodding that damages equipment and wastes man-power.

3. Flow Control Valves

Control flow of bulk materials from bins, hoppers and chutes. Rotating control lever increases or decreases opening of flexible iris type diaphragm and flow of material without jamming or clogging.

Write for FREE Illustrated Folders

SYNTRON CO.
410 Lexington Ave. Homer City, Pa.

If you write make identify as IEN - 9625

100% SELF-CONTAINED

Easy to Operate
Easy to Transport

SYNTRON

Gasoline Hammer

ROCK DRILLS

Low Initial Cost . . . no big air compressor to buy—no truck required.

Low Operating Cost . . . easy one-man operation — no crew necessary.

Low Fuel Cost . . . consumes about 2 qts. of low-test fuel per hour.

SYNTRON CO.
410 Lexington Ave., Homer City, Pa.

Write For Illustrated Folder GH-4

If you write make identify as IEN - 9626

New Dual V-Belt Drive

SYNTRON

PORTABLE

ELECTRIC SAW

The new Dual V-Belt Drive eliminates gears—provides shock-absorbing, velvet-smooth operation for faster, cleaner cutting. Cuts and rips wood; cuts and scores brick, tile and other materials with 6000 RPM full load blade speed.

Its high speed feeds the blade in—no need to push or ram. $2^{11}/_{16}$" cut with an $8^1/_2$" blade—weighs 19 lbs.

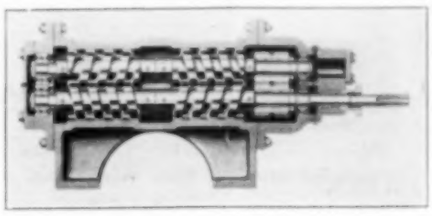
Write for FREE Catalog Folder

SYNTRON CO.
410 Lexington Ave. Homer City, Pa.

If you write make identify as IEN - 9627

PUMP . . Balanced screw design for lubricating liquids, to 700 gpm.

Source: SIER-BATH GEAR & PUMP CO.
9250 Hudson Blvd., North Bergen, N. J.



Will handle semi-fluids efficiently

Packing boxes have been removed from the company's screw pump for non-lubricating liquids, previously described IEN 2157-51, and the bearings and timing gears have been brought in close to the balanced pumping screws in this new design of the company's Bracket Type pump. Double row ball bearings take both radial and thrust load at the outboard end.

Timing gears on the inboard side of the screws hold them in correct frictionless relation to each other. Roller bearings next to the timing gears take radial load and permit free axial movement. Liquid is connected to enter at the two ends of the screws and move toward an outlet port at the center, the double flow eliminating end thrust.

The pump is designed for discharge pressure to 1,000 lb. when handling viscous liquids and to 500 lb. with light oil. Capacity ranges from 1 to 700 gpm. Speed is to 1,800 rpm. with direct connection to a driving motor.

If you write make identify as IEN - 9628

MARKING . . Hand stamp holds ink and interchangeable stencils

Source: E. W. MOORE CO.
70 E. 45th St., Room 2716, New York 17, N. Y.

List is $8 and $12

Two sizes are available in this new Copy-Stamp. One prints in a $1^1/_8$ by $3^1/_2$-in. space. The other covers $2^1/_2$ by $4^1/_2$ inches. Each is supplied with 12 stencils, ink, a stylus pen and writing plate, all packed in a carrying case.

The user prepares the stencil by means of a typewriter or by drawing or writing with the stylus pen on the plate. The stencil is then inserted in the holder, ink is filled through an opening covered by the handle and the stamp is ready for use. It is set on a work surface at a slight angle and then rocked across the surface to the opposite side.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write make identify as IEN - 9629

Now you can fasten V-belts by using ALLIGATOR V-BELT FASTENERS

● Alligator V-Belt Fasteners and open-end (long length) V-belting in rolls will enable you to make up multiple V-belt drives for a wide variety of applications.

Available for B, C and D sizes of V-belting.

Not to be used for repairing endless cord V-belts.

Bulletin V-211 will give you complete details. A copy mailed on request.

Order from your supply house

FLEXIBLE STEEL LACING COMPANY
4610 Lexington Street, Chicago 44, Illinois

Also sole manufacturers of Alligator Steel Belt Lacing for flat conveyor and transmission belts and FLEXCO Belt Fasteners and Rip Plates for fastening and repairing conveyor belts.

If you write make identify as IEN - 9630

EVERY ENGINEER will want a copy of this BULLETIN

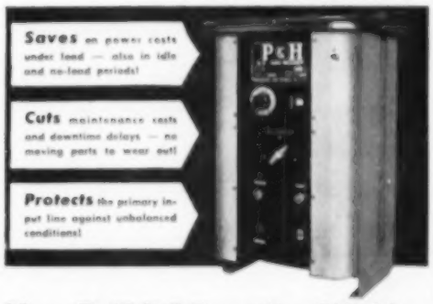
SEND FOR BULLETIN 110

● It's easy to get the right cylinder for even the most special jobs when you use Hannifin's big hand-book on HYDRAULIC CYLINDERS. 52 pages of helpful specification and engineering data, complete with diagrams and dimensions. The Hannifin line is complete! 12 standard bore diameters, 1" to 8" . . . any length stroke you specify . . . 11 standard mounting styles . . . standard, double end or heavy duty (2:1) piston rods . . . available with adjustable cushions . . . pressures to 1500 lbs. per sq. in. Send for Bulletin 110. Hannifin also builds custom cylinders in any quantity to special designs. *Bring us your cylinder problems!*

HANNIFIN

1107 S. Kilbourn Ave., Chicago 24, Ill.

If you write make identify as IEN - 9631



Saves on power costs under load — also in idle and no-load periods!

Cuts maintenance costs and downtime delays — no moving parts to wear out!

Protects the primary input line against unbalanced conditions!

New P&H DC Rectifier Welder

— with Dial-lectric Control

Gives you economy, quiet operation, balanced-line loading, and instantaneous remote control.

You get low-cost DC welding current without a generator, from this new P&H DC Rectifier Welder — industrial twin to the famous P&H AC Dial-lectric Welder. Two sizes: 200 and 300 Amps at 40V.

No troublesome mechanical devices to control amperage—simply turn a single radio-type knob. This and other P&H extra-value features help you realize savings on power consumption and maintenance.

Ask your P&H representative or distributor for further information. Or write direct.

P&H WELDING DIVISION
HARNISCHFEGER CORPORATION
4520 WEST NATIONAL AVENUE
MILWAUKEE 46, WISCONSIN

Power Shovels • Crawler and Truck Cranes • Overhead Cranes • Hoists • Arc Welders and Electrodes • Soil Stabilizers • Diesel Engines • Pre-Fabricated Homes

If you write make identify as IEN - 9632

IDEAL "Hand Type" CLEANERS Cut Cleaning Time and Costs!

3 MODELS ...for EVERY CLEANING JOB

For easier, faster maintenance or production cleaning jobs — on machinery, stock bins, scrap pick up — there's an IDEAL "Hand-Type" Cleaner to meet your needs exactly — to save you money! Three great models, all built to rugged, real industrial standards. Get today's top cleaner value — get IDEAL!

Sold Through Leading Distributors

TRY ONE FREE!

IDEAL INDUSTRIES, Inc.
11L Park Avenue, Sycamore, Illinois
Please give us FREE DEMONSTRATION of the IDEAL "Hand-Type" Cleaner for our plant.

NAME _____
COMPANY _____
ADDRESS _____
CITY _____ ZONE ____ STATE _____

If you write maker identify as IEN - 9633

INEXPENSIVE water heating

Heat water in small tanks by direct injection of steam with the

SARCO THERMOTON TYPE S

It combines the function of a silent steam nozzle with approximate temperature control. Prevents boiling over; shuts off automatically when no water is drawn; conserves steam.

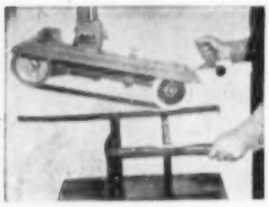
Sizes ½" to 2", pressures to 200 psi.

Ask for Bulletin 551

503

SARCO SARCO COMPANY, INC. Empire State Bldg., New York 1, N.Y. SARCO CANADA LTD., TORONTO 2, ONTARIO
SAVES STEAM

If you write maker identify as IEN - 9634



FOR THE FINISHING TOUCH

You can't beat this new 6-72 Vonnegut Abrasive Belt Grinding and Polishing Machine for cutting weld seams and burrs, removing finish blemishes, etc. Light—but rugged . . . and well balanced . . . easily manipulated when arranged as a *swing machine*. It also can be supplied as a *floor stand* or as a *lathe attachment*. Because of its great versatility, the machine has proved its value for "special" applications too—and it may suggest an entirely new application in your plant. If so, write us about it—we'll be glad to help you solve the problem and supply the details for efficient production. Send for Bulletin No. 62.

Grinding and Polishing Machinery Corp.
SUCCESSORS TO VONNEGUT-MOULDER CORPORATION
1827 MADISON AVE., INDIANAPOLIS 25, U.S.A.

If you write maker identify as IEN - 9635

Deep in the Jungles "way back when"— Apes made the FIRST "Rivetless Chain"

Apes have long been known to form "rivetless" chains. By the simple coupling process of linking, tails they swing themselves out to cross streams and gorges.

Drop-Forged Rivetless Chain
another FIRST by
JERVIS B. WEBB COMPANY

Proved by years of dependable service is the Drop-Forged Rivetless Chain, first developed by Jervis B. Webb Company for Trolley Conveyors. Simple and strong, it is cheaper and lighter per unit of ultimate strength than any other type of conveyor chain. It can be installed or removed by unskilled labor. Having no rivets, welds or bolts, it requires no special or joining links and may be disconnected at any point, yet it is so designed that it cannot become disconnected while in service.

This No. X458 Chain (illustrated below) is completely interchangeable with the Webb FIRST—the original No. 458 Chain designed in the early Twenties by Mr. Jervis B. Webb. X458 Chain has the improved webbed side link which substantially stiffens it preventing telescoping.

Need Conveyor Chain?
We're In Position To Make
IMMEDIATE DELIVERY NOW
X458 Drop-Forged Rivetless Conveyor Chain

Improved production and material conditions have enabled Jervis B. Webb Company to stock an adequate supply of X458 Chain—ready for immediate delivery—to meet your conveyor system needs.

CONVEYOR ENGINEERS AND MANUFACTURERS
JERVIS B. WEBB COMPANY
8615 ALPINE AVE. DETROIT 4, MICH. — OFFICES IN PRINCIPAL CITIES
FACTORIES IN DETROIT . . . LOS ANGELES . . . HAMILTON, ONT.

If you write maker identify as IEN - 9636

BELLOWS . . Metal diaphragms in welded assembly to specification

Source: BRISTOL CO.
Griggs & Kelsey Sts., Waterbury 20, Conn.

Ask for Type E Diaphragm-Bellows Question Sheet

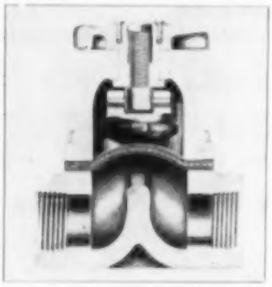
Stainless steel, phosphor bronze, Ni-Span C can be specified in metal thickness ranging from 0.0015 to 0.005 in. for welded assembly into diaphragms to meet specified requirements through development of new manufacturing facilities. The company has been making pressure sensitive diaphragms and bellows for many years employing metals with greater thicknesses and using other methods of assembly. Extremely thin materials now employed supplement that original line.

A data sheet has been prepared naming 15 points on which a prospective user can supply information to receive a firm quotation of an assembly which the company will recommend as best suited. There is no limitation on physical size.

If you write maker identify as IEN - 9637

VALVE . . Plastic body unit, Saunders diaphragm, ½ to 2 inches

Source: AMERICAN HARD RUBBER CO.
93 Worth St., 10th Floor, New York 13, N. Y.



Chemically resistant

Parian or Saran plastic is available in the body of this new Saunders patent diaphragm valve. The unit has been added to the company's Ace line of valves, pipe and fittings to provide completely protected equipment for corrosion resistant service. The diaphragm can be rubber, neoprene or polyethylene. It assembles between the body and the bonnet so the latter is sealed off from the solution and so does not come in contact with it.

The valve can be serviced without removing it from the line. It is available in sizes from ½ to 2 in. with standard pipe threads for working pressure to 55 lb. at 77 deg. F.

Identify as IEN - 9638

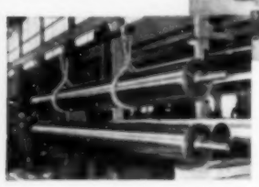
Ever wonder how the penpoint maker slits the nib? It is done with a Norton grinding wheel or disc. The wheel is rubber bonded, 3½ in. in diameter and only 0.006 in. in thickness. Alundum is the abrasive. Grit size is 240.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9639

SHENANGO *Centrifugal* CASTINGS . . . KEY TO SAVINGS

FROM TINY LINERS TO HUGE ROLLS



DOUBLE ASSURANCE of longer life!

FOR close-knit strength and added life, here's a combination you just can't beat—Shenango centrifugally cast parts of Mechanite Metal. It is *double* assurance of finer, more uniform, pressure-dense metal, plus freedom from blow holes, sand inclusions and other defects!

So check with Shenango on your need for symmetrical or annular parts—semi-finished if you wish, or machined to your precise specifications in the modern Shenango shops. Get *all* the facts. Like others you'll probably find you can save time, money and trouble.

SHENANGO-PENN MOLD COMPANY
Centrifugal Castings Division
Dover, Ohio
Executive Offices: Pittsburgh, Pa.

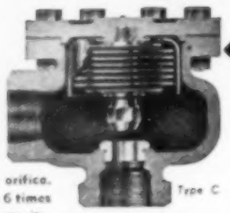
SHENANGO
ALL RED BRONZES • MANGANESE BRONZES • ALUMINUM BRONZES
MONEL METAL • Ni-RESIST • MECHANITE METAL

If you write maker identify as IEN - 9640

Nicholson Traps Feature

MORE capacity LESS parts

Note the extreme simplicity of Nicholson industrial steam traps. The only moving part is the heavy-duty bellows integral with valve. Note also the much larger valve orifice. This results in 2 to 6 times average drainage capacity.

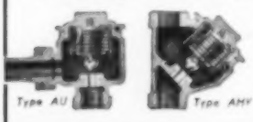


Type C

To see why an increasing number of leading plants are standardizing on Nicholsons for positive drainage and faster heat transfer, send for . . .

BULLETIN 152

159 Oregon St.
Wilkes-Barre, Pa.

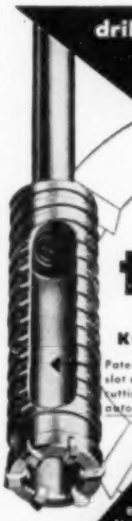


Type AU — Type AHY

W. H. NICHOLSON & CO.
TRAPS · VALVES · FLOATS

If you write maker identify as IEN - 9641

drills **6** inches of concrete per minute



. . . gives lowest cost per foot of concrete drilled with a

tilden

ROTARY
KONKRETE KORE DRILL

Patented core slot expels cuttings automatically

U. S. Pat. No. 2506474

Two-thirds more cutting surface make Tilden 70% more efficient. Drills 5 to 7 times more holes without resharpening—even reinforced concrete. Free factory resharpening! Use with any electric or air drill. 29 standard sizes 3/16" to 4". Interchangeable shanks up to 60".

WRITE TODAY for free, illustrated catalog

SOLD BY SUPPLY HOUSES EVERYWHERE

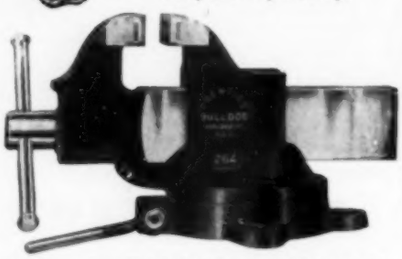
TILDEN TOOL Manufacturing Company
209 Las Malinas • San Clemente, Calif.
Branch Office: 1144 W. Washington Blvd., Chicago 7, Illinois

If you write maker identify as IEN - 9642

PRENTISS

"BULL DOG" VISES

Backed by 80 years of time-proven acceptance by industry.



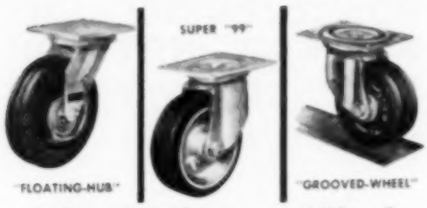
MACHINISTS — TOP SWIVEL JAW — COMBINATION PIPE HINGE PIPE — WOODWORKERS — UTILITY

Renewable steel jaws that cannot work loose, swivel base with a positive lock plus other features give you vises that will stand the most severe tests. Send for THE NEW PRENTISS CATALOGUE TODAY.

See Us at Booth 737, Triple Mill Supply Convention.

PRENTISS VISE DIVISION
OF THE CHARLES PARKER CO., MERIDEN, CONN., U. S. A.

If you write maker identify as IEN - 9643



A Bassick Caster or Wheel for every need!

Whatever the moving problem, there's a Bassick size and type to solve it.

"Floating-Hub"—the only caster with true shock-absorption.

Super "99"—the new, heavier wrought steel, double ball race, top quality, general purpose casters.

"Grooved-Wheel" Casters—4 in. to 10 in. wheel sizes for light and heavy service requirements.

All types of industrial wheels.

Write for complete Truck Caster catalog to the world's largest manufacturer of casters. . . THE BASSICK COMPANY, Bridgeport 2, Conn. *In Canada:* Belleville, Ont.

Bassick A DIVISION OF STEWART SW WARNER

MAKING MORE KINDS OF CASTERS . . . MAKING CASTERS DO MORE

If you write maker identify as IEN - 9644

Preferred power on tank-car heaters or mobile steam generators for heating tank-cars of road oil and bitumen — the world's most widely used single-cylinder gasoline engines on machines and equipment for the construction industry, railroads, oil fields, and for farms and farm homes

Whether you build, sell, or use gasoline-engine powered equipment — you are assured of maximum performance and foremost value when the power is a Briggs & Stratton single-cylinder, 4-cycle, air-cooled gasoline engine. Briggs & Stratton Corporation, Milwaukee 1, Wisconsin, U.S.A.

In the automotive field Briggs & Stratton is the recognized leader and world's largest producer of locks, keys and related equipment.

If you write maker identify as IEN - 9646

TACHOMETER . . Electric equipment indicates, records machine action

Source: GENERAL ELECTRIC CO. Dept. 6X-201, Schenectady 5, N. Y.

About $900 to $1,010

Machine performance, particularly in continuous processing operations as in manufacture of aluminum and steel sheet and strip, glass, paper, textiles, can be indicated at any given moment and recorded over a period of time by this new electric tachometer equipment. It is supplied in a kit assembly to include a dc. generator to be driven by the machine on which a record is to be kept, an indicator to read momentary speed, a strip chart recorder for installation in a control office and either a mechanical or an electronic web brake detector.

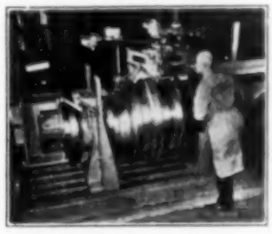
The mechanical detector rides on work such as a strip of metal or non-metallic material as it moves through the machine. The electronic equipment observes the strip without touching it. Both units can be connected to sound an alarm, to make a record on the recorder chart and to stop the machine when a break occurs.

The recorder is driven by a small synchronous motor and is designed for semi-flush panel mounting. Chart speed is 3 iph. Useable chart width is 4 inches. Illustrated details are contained in Bulletin GEC-816.

If you write maker identify as IEN - 9647

ENGRAVING . . Pantograph machine produces designs in cylindrical rolls

Source: GEORGE GORTON MACHINE CO. 1808 Racine St., Racine, Wis.



Replaces hand marking

Two new machines have been added to the company's line of pantograph engraving equipment, previously described IEN-8634-51, to produce designs in curved surfaces, particularly steel mill rolls. Both machines will handle rolls to 36 in. in diameter. One has length capacity to 7½ ft., the other to 12 ft.

The work is cradled on a bed plate and is indexed by turning a hand crank that operates in connection with a ring gear clamped on the roll. The pantograph mechanism rides a rail at the rear and works to a flat master. Movement of the tracer forward and back on the flat master pattern is accompanied by corresponding rotation of the roll so the cutter point remains centered over the roll axis as the work proceeds. Movement of the tracer from left to right follows the master without roll rotation.

The cutter spindle takes a ¾ in. collet and is driven at any of 9 speeds in a range between 1,300 and 9,200 rpm.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9648

Only the New TYPE "R" MORRIS SLURRY PUMP *has these 4 features*

1. **Gland is under suction pressure only. This feature practically eliminates packing troubles.**
2. **For dismantling, you need remove only four bolts. No internal studs or bolts . . . no troublesome fits or joints.**
3. **You can remove impeller and liner without disturbing piping.**
4. **Shell interchangeable for right or left-hand rotation. Suction and discharge nozzles can be rotated to positions in any of four quadrants.**

The New Type "R" Morris Slurry Pump handles caustic or acid mixtures containing abrasives or solids: also are concentrates, tailings, slag, residue from filters and classifiers.

Write for specifications and operation data on pumps best suited to your particular needs. No charge or obligation.

MORRIS MACHINE WORKS
Baldwinsville, N. Y.
Sales Offices in Principal Cities

MORRIS CENTRIFUGAL PUMPS

If you write maker identify as IEN - 9649

HEAVY DUTY INDUSTRIAL TRAILERS

Standard or Special CAPACITIES TO 60,000 lbs.

A-620 Low deck, 5th wheel steer trailer.

A-443 Die handling trailer.

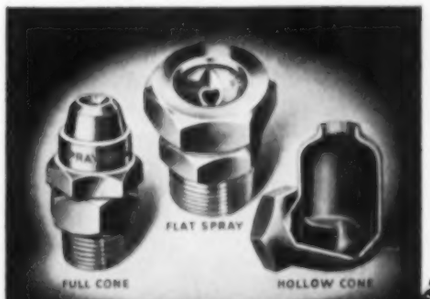
A-520
Medium height, 5th wheel steer trailer.

MERCURY

In addition to the standard "Type A-310" castor steer trailer, MERCURY offers a complete line of heavy duty trailers in castor steer, fifth wheel steer or four wheel steer designs in capacities to 60,000 lbs. As the world's largest producer of industrial trailers, Mercury is well equipped to fill your specific requirements. For complete information request Bulletins A-100 and A-999.

MERCURY MANUFACTURING COMPANY
4132 S. Halsted Street, Chicago 9, Ill.

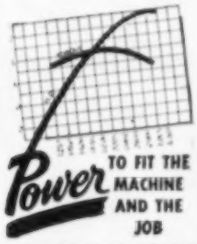
If you write maker identify as IEN - 9650



SPRACO NOZZLES

Write for NOZZLE CATALOG *to*
SPRAY ENGINEERING CO.
110 CENTRAL STREET • SOMERVILLE 45, MASS.

If you write maker identify as IEN - 9651



Power TO FIT THE MACHINE AND THE JOB

WISCONSIN-POWERED Gardner-Denver Compressor

This Model TP0493LE Portable Compressor, made by Gardner-Denver Co., Quincy, Ill., is supplying air for the operation of a Model S17 Utility Drill, engaged in a plant maintenance job. Complete power reliance is placed on the Model TF 2-cylinder Wisconsin Heavy-Duty Air-Cooled Engine.

More and more builders of engine-driven equipment are discovering, to the satisfaction of themselves and their customers, that you can't do better than to specify "Wisconsin Engines" . . . for dependable power to fit both the machine and the job.

Available in a complete power range from 3 to 30 hp., in 4-cycle single cylinder, 2-cylinder and V-type 4-cylinder models, Wisconsin Air-Cooled Engines provide economical power, without waste, to meet the most exacting requirements. Look into them for your use.

WISCONSIN MOTOR CORPORATION
World's Largest Builders of Heavy-Duty Air-Cooled Engines
MILWAUKEE 46, WISCONSIN

If you write maker identify as IEN - 9652

EFFICIENT LOW COST SPRAYING!

DELAVAN'S Type WF Spray Nozzle delivers a flat, uniform spray ideal for:

Metal Cleaning
Industrial Washing Machines
Hot Asphalt Spraying
Gravel Washing
Coal Washing

... and many other industrial applications.

Write for Catalog No. 30

DELAVAN MANUFACTURING CO.
3009 SIXTH AVENUE
DES MOINES 13, IOWA

If you write maker identify as IEN - 9653

MODERN TIME AND COST SAVERS BUILT BY... Standard GRAVITY & POWER CONVEYORS

LIFT OR LOWER— FLOOR TO FLOOR WITH A

STANDARD INCLINEBELT

Move boxes, cases, cartons, sacks or bundles from basement to first floor, or any floor to floor — continuously with the Standard Inclinebelt. Compact — simple to install — minimum maintenance and attention. Lifts or lowers 10 to 20 lbs. of live load per ft.; floor elevations of 8 ft. to 14 ft. 6 inches inclusive; two belt widths to handle commodities 15½ inches to 25½ inches wide. Electric motor operated. Write for INCLINEBELT Bulletin — address Dept. IEN-92.

STANDARD CONVEYOR COMPANY
General Offices: North St. Paul 9, Minn.
Sales and Service in Principal Cities

If you write maker identify as IEN - 9654

NEW "MITE-MITE" NO. 500 Portable De-Magnetizer

The marvelous, foolproof device industry has been waiting for.

Indispensable wherever magnetism is a problem.

Every shop needs this truly important device

PRICE $10.50 complete
SEND FOR BULLETIN NO. 604
Order from your mill supply dealer or send order with name of your mill supply dealer.

ENCO MANUFACTURING CO., DEPT. IE-92
4524 W. Fullerton Ave., Chicago 39, Ill.

USEFUL NEWS NOTES INFORMATION

If you write maker identify as IEN - 9655

AIR CONDITIONING . . Method of control at a central pre-wired panel is described in new booklet

Barber-Colman Co.
1312-16 Rock St., Rockford, Ill.

Local electricians can install the central control panel described in new 8 page Bulletin F 5285 for heating and air-conditioning equipment. The bulletin tells how the electrician can go about doing so, shows a typical installation wiring diagram and a schematic diagram for preparing specifications.

If you write maker identify as IEN - 9656

ALLOYS . . Heat resistant types in cast form are described as to properties and uses

International Nickel Co.
67 Wall St., Room 703, New York 5, N. Y.

Initial section of new 48 page booklet, "Heat Resistant and Corrosion Resistant Alloy Castings in Industry", describes standard alloys as to composition, properties, type of service. Most of the booklet consists of captioned pictures on typical applications of heat resistant and corrosion-resistant alloy castings grouped by type of service.

If you write maker identify as IEN - 9657

CASTINGS . . Use of shell-type molds for casting stainless alloys described in reprint

Cooper Alloy Foundry Co.
212 Bloy St., Hillside, N. J.

Procedure followed in the company's plant for casting stainless-steel valves and fittings in shell molds is covered by new 8 page technical article reprint, available on request. You may be interested in some of the developments such as using the resin-bonded shell-type sand molds without backup, method of holding the shells together, properties of the resulting castings.

If you write maker identify as IEN - 9658

CUTTING . . Book on cutting tools tells how to select and use them with reasons why

McGraw-Hill Book Co.
327 W. 41st St., New York 36, N. Y.

Emphasis is placed on proper design, selection and application of the single-point cutting tool in new 438 page textbook, "Design and Use of Cutting Tools". Author is Leo J. St. Clair. List price is $7. The book describes tool angles, reasons for them, recommended values. One chapter covers choice of cutting tools. Another, on cutting edge and chip formation, stresses importance of an even and strong cutting edge.

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If you write maker identify as IEN - 9659

PRECISION MEASURING

SCHERR MICROMETERS

No READINGS AT NO EXTRA COST

Drop-forged steel frame easy to read. "No Glare" graduations. Guaranteed accuracy and unsurpassed workmanship.

For greater savings in dollars and better satisfaction, use "Scherr Tools".

Complete stock. All sizes — MM. or Inch.

MAUSER VERNIER CALIPER

For inside - outside and depth measurements in 1/1000, 1/128, 1/10mm and 1/20mm.

If not available from your dealer, order direct.
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COMPLETE LINE OF PRECISION INSTRUMENTS
198-C LAFAYETTE ST. • NEW YORK 12, N. Y.

If you write maker identify as IEN - 9660

HOW TO CONTROL GAGES AND GAGE INSPECTION

New illustrated booklet describes and shows suggested McCaskey procedures and forms designed to provide:

Reinspection date follow-up.
Location and condition of each gage and measuring instrument, loaned or in crib.
Gage and Instrument History record.
Central clearance record of each employee's gages and instruments.
Tool and gage inspection report.
Gage tag, conditional release tag for tools (fixtures), and faulty tool and gage tag.
Instrument and gage withdrawal order, etc., etc.
... all designed for complete control with speed, accuracy and minimum clerical work.

Close control of your gages, instruments and fixtures and their inspection will reduce spoiled work and rework costs . . . and improve your product quality.

Write today for your copy of McCaskey Tool and Gage Inspection Control—Bulletin A-512 IEN—showing how it can be done.

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PRODUCTION • TOOLS • INVENTORY • COSTS • MAINTENANCE

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MOISTURE'S NO PROBLEM

chase out foul, wet air!

- Good looking
- Fit any roof
- Easy to install
- Motor out of line of air flow — for better performance in moisture filled air

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MANUFACTURING CO. OWATONNA 33, MINN.

If you write maker identify as IEN - 9662

Here's the Answer to Your Sharpening Problems!

Patent No. 2325364

The I.G.C. RELIEF GRINDER

Speeds Up Grinding Operations by as much as 300%

★ Grinds radial relief on straight or spiral fluted cutters
★ Grinds *all* cutting edges equally
★ Keeps tools on the job longer between grinds
★ Fits all standard grinding machines

For complete information please write

INDUSTRIAL GRINDING CO.
1600 W. MAGNOLIA BLVD.
BURBANK, CALIFORNIA

If you write maker identify as IEN-9663

It's just good business to
KEEP FLOORS CLEAN, SAFE, ATTRACTIVE!

- KENT FLOOR MACHINE with "Balanced Power"
- KENT VACUUM CLEANER for Wet and Dry Work

YOUR WORKERS ARE AS EFFICIENT AS THEIR EQUIPMENT! Give them the best—the all-weight-on-brush KENT Floor Machine with "Balanced Power" for ease of operation . . . and the KENT VACUUM CLEANER for Wet and Dry Pick-up! It pays to invest in quality!

Full Information upon Request

CLEAN WITH KENT EQUIPMENT

The KENT Company, Inc. • 437 Canal St. • Rome, N. Y.

If you write maker identify as IEN-9664

New BRUNING Copyflex 14

speeds all factory paperwork!

In *seconds*, get error-proof, smudge-proof, low cost copies. Speed production control, work tickets, accounting, purchasing, shipping, or any system, with COPYFLEX 14. It's the *only desk-side* copying machine that gives you:

(1) **20" width!** Copies even *large* reports . . . or two ordinary forms simultaneously. Separates and returns originals automatically.

(2) **No installation!** No fumes, so no exhaust ducts are needed. Thus, the "14" is *mobile*, rolls to any work-site.

(3) **Copies of even opaque originals** or forms printed on *both* sides, using Bruning's exclusive Reflex Film!

(4) **Unequalled combination of speed, volume, low-cost.** Copies thousands of *different* originals daily, as many copies of each as desired, at an average cost of only 2¢ per sq. ft.

There's a COPYFLEX machine for every price or print requirement. Write CHARLES BRUNING COMPANY, INC., Dept. B92, Teterboro, N. J., for full details.

BRUNING
Specialists in copying since 1897

USEFUL INFORMATION
(Concluded)

If you write maker identify as IEN-9666

CONTROLS . . Book publishes technical papers on automatic control equipment, problems, applications

Academic Press Inc.
123-7 E. 23rd St., New York 10, N. Y.

Technical papers presented at a British Conference on Automatic Control in July 1951 are assembled in bound form into new 586-page book, "Automatic and Manual Control". List price is $10. The book is intended as an advanced reference work on the subject. It deals with such subjects as general theory, process control, non-linear problems.

If you write maker identify as IEN-9667

DRAFTING . . How to dimension a drawing is described by bad and good examples in 40-page booklet

Gisholt Machine Co.
1243-47 E. Washington Ave., Madison 10, Wis.

Third Printing is announced for the company's booklet, "Practical Dimensioning", which you can secure on letterhead request for an individual copy. Drawings show bad and good practice in dimensioning a drawing together with reasons why. Principal errors stressed include accumulation of tolerances, tolerancing to too close limits, improper choice of dimensions, failure to dimension from similar base lines on mating parts.

If you write maker identify as IEN-9668

DRAFTING . . Plastic template combines compass, scale, protractor and square

Unistrut Products Co.
1011-15 W. Washington Blvd., Chicago 7, Ill.

No charge is made for new Circ-L-Scale drafting template. It is made of Vinylite plastic, measures about 7 by 1½ inches. The face carries a 6-in. scale on one edge, a ¼ and ⅛-in. to the foot scale on the other. One end is a protractor. Five circular openings measure ⅛ to ½ in. in diameter.

A feature is a circular opening through which a fingertip is placed to serve as a pivot point. This is used with a set of pencil-point openings to produce circles in ⅛-in. steps to 6 in. in diameter. The reverse side carries equivalents.

If you write maker identify as IEN-9669

ENGINEERING . . Basic reference data from acoustics to mathematics in new 1,324-page handbook

John Wiley & Sons Inc.
440 Fourth Ave., New York 16, N. Y.

Thirty-nine authorities contributed to newly-revised Second Edition of the "Handbook of Engineering Fundamentals", list price $10. The book presents reference information on mathematics, mechanics, aerodynamics, thermodynamics, radiation, light, acoustics, chemistry, materials.

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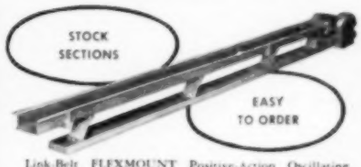
If you write maker identify as IEN-9670

NOW! FLEXMOUNT Oscillating Conveyors available from stock!



Link-Belt FLEXMOUNT Positive-Action Oscillating Conveyors offer unique advantages on a wide range of hard-to-handle materials—fine, lumpy, stringy . . . materials in food and chemical process industries . . . sharp, oily chips and turnings . . . hot sintered materials, etc. Uniform, gentle flow is achieved with Positive-Action. Leak-proof, all-metal trough can be made dust-tight. Extremely compact, low in operating costs.

WRITE FOR BOOK 2478

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LINK-BELT COMPANY Plants: Chicago, Indianapolis, Philadelphia, Atlanta, Houston, Minneapolis, San Francisco, Los Angeles, Seattle, Toronto, Springs (South Africa), Sydney (Australia). Sales Offices, Factory Branch Stores and Distributors in Principal Cities.

If you write maker identify as IEN-9671

ECONOMY-WISE?

BUY MOLDED PLASTICS BY GRIGOLEIT

The best for less has been a habit with Grigoleit for over a quarter century. Economy, service and sales appeal combine to give your product a new look in molded plastics. A complete line is available for your selection. Prompt delivery assured, providing you order now.

GRIGOLEIT is now in a position to accept orders for the manufacture of small finished plated stampings for appliance trim.

THE GRIGOLEIT COMPANY

If you write maker identify as IEN-9672

THEY GRIND--NOT JUST RUB!

The RPM's stay up while grinding . . . not only when the grinder runs idle.

It is an established fact that surface speeds must stay up to approximately a mile a minute if you want to grind . . . not just rub. Every mechanic knows this, but an inexperienced buyer may order tools that maintain proper grinding speeds only when running idle. The speed of Kipp air grinders drops but slightly when put to work. That means better work . . . longer wheel life.

MADISON-KIPP CORP.
224 Waubesa St., Madison, Wis., U.S.A.

Write for KIPP Air Tool Catalog AT 3006

If you write maker identify as IEN-9673

CONTROL dust with DUCON WASHERS

Superior design and exclusive features, including wet suppression, result in the most economical and efficient control of dust and fumes.

Assure collecting efficiency up to 99%. No secondary dust problem. No moving parts, therefore practically no maintenance. Retains constant air capacity. Eliminates fire and explosion hazards. Can be used in high temperatures.

In addition to use for washing of air and gases, DUCON Centrifugal Wash Collectors are ideal for many other applications, such as: gas absorption, condensation of solvents, heat exchange, distillation and chemical reactions.

Construction: steel plate, electrically welded. Easy accessibility to all internal parts. Built for simplified installation.

Write for Bulletin CW 48-1

The DUCON Co.
MINEOLA, N. Y.

If you write maker identify as IEN - 9674

CARTER MICRO-PRECISION GUIDES

For Faster, Smoother Bandsaw Cutting

Step up your production with Carter Micro-Precision Guides. You get faster, smoother, more accurate operation because Carter Guides hold the blade close to the work. Also cut excess blade breakage on tough jobs — and reduce costly material waste. Available with ball bearing or Oilite wheels for all size bandsaws.

Write for free illustrated folder.

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420 Wm. Alden Smith Bldg.
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GRAND RAPIDS 2, MICH.

Carter

CUTS COSTS WAY DOWN!

If you write maker identify as IEN - 9675

The broad Trumbull line helps you get the "right" breaker

You name the job. Trumbull has the circuit breaker to do it—and do it well.

By sticking to Trumbull you make sure you'll always find the "right" breaker—regardless of the duty the particular installation calls for!

There are enclosed units of general-purpose, flush-mounting, semi-dust-tight, and waterproof and dust-tight varieties. Breakers are encased in rugged black phenolic and are available separately without special enclosures. Ratings from 10 through 600 amps, at voltages of 125 to 600 a.c. or 125 to 250 d.c. fully Underwriters approved and with interrupting ratings in accordance with NEMA standards up to 25,000 amps in 600-amp frame. One-, two- or three-pole. And don't forget the new plug-in units with quick-make, quick-break action. Send for bulletin and application section today.

TRUMBULL ELECTRIC

DEPARTMENT OF GENERAL ELECTRIC COMPANY
PLAINVILLE, CONNECTICUT

If you write maker identify as IEN - 9676

New CROWN Rust Inhibitor

(Pat. Pending)

Spray or DIP *to Protect*

- Finished Goods
- Stock in Bins
- Precision equipment
- Tools
- Spare Parts
- Anything that's Valuable and Subject to Rust

Just put it on and leave it on! High-quality animal wax base fluid will not gum or clog under heat or friction. Not smeary, resists rubbing off, yet does not dry hard. Non-inflammable—harmless to hands, metal, plastics. In aerosol-type spray can or in bulk for dipping.

ORDER TODAY $2.00 per 12-oz trial can. Discount for cases of 12. Also in bulk; write for details and discount.

CROWN INDUSTRIAL PRODUCTS CO.
402 Barden Ave., Sycamore, Ill.
Please ship at once
.....(How Many?) cans
.....(How Many?) cases
NAME.....
COMPANY.....
OUR PURCHASE ORDER NO.....
ADDRESS.....
CITY.....ZONE.....STATE.....

USEFUL INFORMATION

(Continued)

If you write maker identify as IEN - 9677

GAGES . . For surface roughness are summarized as to working range in new wall chart

Micrometrical Mfg. Co.
343-47 S. Main St., Ann Arbor, Mich.

Types of work with internal and external dimension ranges are given for seven standard Profilometer micro-inch surface-roughness tracers in new 11 by 17-in. wall chart, available on letterhead request. Types of piloting employed also are listed, manual and automatic. Drawings show applications.

If you write maker identify as IEN - 9678

HEATING . . Heat exchanger standards are presented in revised edition of Association book

Tubular Exchanger Mfrs. Assn.
51-55 Park Place, New York 7, N. Y.

Two new sections are included in 1952 Third Edition of "Standards of the Tubular Exchanger Manufacturers Association". One gives mechanical standards on alloy steel heat exchangers. The other contains general information. The 160-page book, list price $5.50, gives mechanical standards, material specifications, thermal standards and reference data, operation and maintenance.

If you write maker identify as IEN - 9679

INSULATING . . Materials for metal buildings for comfort summer or winter are summarized

Owens-Corning Fiberglas Corp.
100 Nicholas Bldg., Toledo 1, Ohio

Board, blanket, flexible, perimeter insulation materials are presented in new 8-page bulletin, "Insulations for Metal Buildings". Sizes, properties, application methods are given together with design considerations and notes on condensation.

If you write maker identify as IEN - 9680

JACKS . . Booklet of application suggestions on portable hydraulic jacks in standard and remote types

Blackhawk Mfg. Co.
5323-27 W. Rogers St., Milwaukee 1, Wis.

Pulling gears, pushing pipe, lifting buildings, testing deflection, removing accident victims, are among the many applications of the company's "Porto-Power" and standard hydraulic jacks shown in new 64-page "Idea Book". Each application is shown by a captioned illustration. Applications also are shown for wrenches and torque wrenches along with catalog data.

If you write maker identify as IEN - 9681

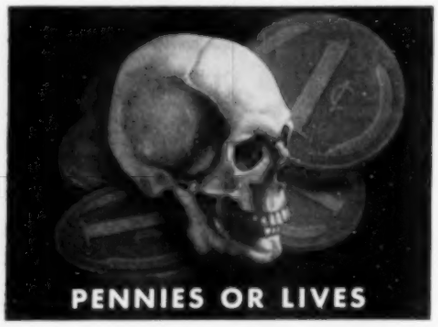
MAGNESIUM . . Information on welding it by inert-gas-shielded arc method in technical reprint

Dow Chemical Co.
913-17 Jefferson Ave., Midland, Mich.

Arc characteristics, mechanical properties and soundness of welds produced in magnesium alloy FS-1 by the inert-gas-shielded arc method are described in 8-page reprint bulletin, available upon request. Author of the technical paper is Paul Klain of the company's Metallurgical Laboratories. Experimental results are summarized with pictures of test specimens.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9682



One inferior fitting . . . a sudden failure . . . and a workman is maimed or killed. This can happen in your business if you try to skimp on quality in wire rope fittings. And it will cost you plenty in higher insurance rates, compensation, lost time and damages.

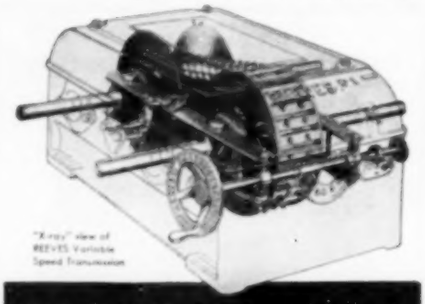
That's why blue-chip companies all over the U.S. insist on Laughlin wire rope and chain fittings. Drop forged for strength, designed to give an extra margin of working safety on every job, Laughlin fittings are a sound investment on original equipment and your best protection on every replacement.

Look for the trademark—for safety's sake.

Comprehensive Catalog No. 150 is free
THE THOMAS LAUGHLIN CO.
91 FORE ST., PORTLAND, MAINE

LAUGHLIN
THE MOST COMPLETE LINE OF WIRE ROPE AND CHAIN FITTINGS

If you write maker identify as IEN - 9683



REEVES *Variable Speed Transmission*

Provides positive, accurate speed changes—without stopping machine—to meet the requirements of every operation and operator, under every changing condition. Easily applied to machines in service—requires no special tools or training to maintain. Horizontal and vertical designs, open or enclosed—in sizes fractional to 87 hp; speed ratios 2:1 through 16:1; manual or automatic controls. Internal operating parts also available for easy incorporation within the framework of your machines. Get full details on the complete REEVES line. Write for free Catalog IN 71 a-G.

REEVES PULLEY COMPANY • COLUMBUS, INDIANA

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IN CONCRETE, MARBLE, OR ROCK

★ DRILL EASIER
★ DRILL FASTER
★ DRILL CLEANER

WITH THE ORIGINAL
ROTARY CONCRETE DRILL BIT

For use in electric or air rotary drills. No hammering—no chiseling—no jarring. RCD Drill Bits' pulverizing action does the job better. Cheaper, too, because they are so much faster. Standard sizes ¼" to 2" in diameter. *Free factory re-sharpening until further notice.*

Send for new low prices and illustrated literature

Personalized guarantee given to every RCD Drill Bit user.

ROTARY CONCRETE DRILL CO.
650 S. Arroyo Parkway • Pasadena 1, Calif.

If you write maker identify as IEN - 9685

FOR TEMPERATURES UP TO 450° F.

Flexible as rubber . . . weighs less than ½ oz. per lineal ft. . . . vibration resistant.

The answer to heating pipes, cylindrical valves, etc. Provides maximum heat transfer and uniform heat distribution. Easy to apply.

ASK YOUR ELECTRICAL SUPPLY DEALER

SPECIFICATIONS

Description	Volts	Max. Amps	Watts Per Ft.	Length of Tape	Width of Tape	Price Complete
6 ft. 150 Tape	115	1.3	150	6	½	$21.95
6 ft. 225 Tape	115	2.0	225	6	½	$21.95
6 ft. 300 Tape	115	2.6	300	6	½	$21.95
6 ft. 450 Tape	115	3.9	450	6	½	$21.95

Complete kit includes heat tape, insulation, hinges, pads, T.T.

Electraflex CORP.
DEPT. IE-4, 7116 LAUREL CANYON BLVD., NORTH HOLLYWOOD, CALIF.

If you write maker identify as IEN - 9686

Some like them green...
Some like them clear...

Safety Goggles

Either Style gives
Wide Vision and Comfort

AO Panoram Goggles

Workers obtain a "picture window" view of the work with AO's Panoram Goggles. Both the "600" model for large and medium size faces and the "800" for smaller faces are available in any combination of green or clear lenses or frames. Rubber cushions are available for utmost comfort when goggle must be worn for long periods of chipping, grinding, babbitting, riveting, spot welding and similar work. Your nearest AO Safety Products Representative can supply you.

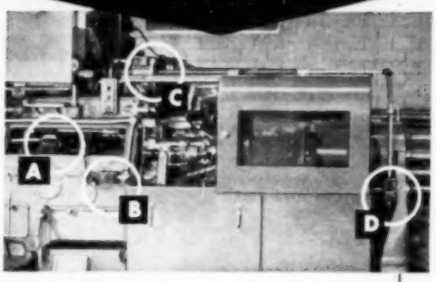
Register and Vote!

American Optical
SAFETY PRODUCTS DIVISION

Southbridge, Massachusetts • Branches in Principal Cities

If you write maker identify as IEN - 9687

How one plant engineer used 5 MICRO Precision Switches to make a six-spindle screw machine best suited to his production needs!



Plant operating men have found hundreds of uses for MICRO precision switches on present plant equipment to make the operation of their machines best fitted to their production needs.

Illustration shows how one plant operating man used five MICRO switches to make the operation of a six-spindle screw machine most perfectly adapted to his needs.

A
If a part that has been machined becomes jammed in the collet and is not ejected properly, this switch shuts off the motor before damage can occur.

B
Operated by the hand starting lever, this switch keeps the machine from starting unless collet is fully closed, preventing damage to machine or work.

C
One or the other of these two switches operate when the shields on either side are open. This shuts off the power and stops machine until shield is reclosed. This protects operator and prevents oil splash.

D
Operated by the chuck closing shoe . . . must operate at the same time as switch on hand closing lever (B) or machine will stop. Prevents possible damage to shoe and chuck opening and closing mechanism.

MICRO distributors are located in over 100 cities to supply you just the right switch to meet your plant application need.

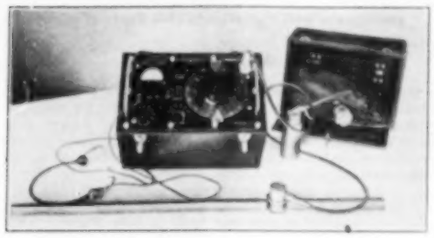
MICRO
MAKERS OF PRECISION SWITCHES
FREEPORT, ILLINOIS

A DIVISION OF
MINNEAPOLIS-HONEYWELL REGULATOR COMPANY

If you write maker identify as IEN - 9689

GAGE . . Electronic instrument to read thickness of sheet materials

Source: BRANSON INSTRUMENTS INC.
431 Fairfield Ave., Stamford, Conn.



Repeat accuracy to 0.5 per cent

The scale that provides a reading on this new instrument can be supplied either for direct reading or to show deviation from a predetermined thickness. The company is prepared to supply the instrument and a suitable head-mounted crystal for specified thickness range in an overall range from 0.010 to 12 inches. Plug-in frequency coils and matched dials are interchangeable in the field for other intermediate ranges than those originally selected.

The instrument takes two coils at one setting so each dial has provision for two scales. Application can be made to read thickness with access to one side of materials such as aluminum, brass, copper, glass, steel and certain plastics capable of transmitting ultrasonic waves generated by the crystal.

Operation employs ultrasonic vibration to energize the crystal and transmit vibration into the material. Controls are adjusted until the circuit has been tuned to a resonant frequency. At this point the scale provides the reading and an audible signal indicates that the instrument is set to read.

Weight is 23 lb. with a set of accessories for operation on a self contained battery power supply or on 110-volt 60-cycle ac. The equipment illustrated is shown with a head set up to slide along a tube to check its wall thickness for uniformity.

If you write maker identify as IEN - 9690

VIBRATING . . Rotary agitator for materials held in laboratory flasks

Source: B. F. GUMP CO.
1323-27 S. Cicero Ave., Chicago 50, Ill.

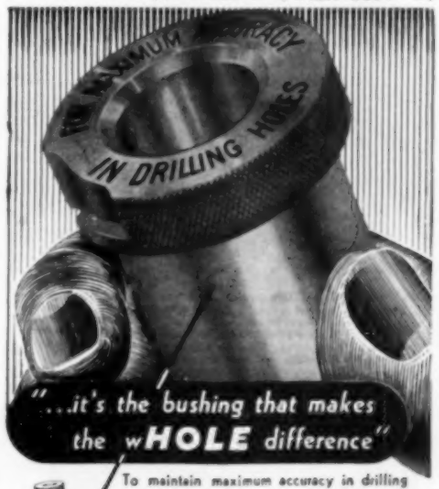
Fixed amplitude

Flask Agitator is a new motor driven rotary machine that imparts true circular horizontal agitation to materials held in flasks secured on the machine table in cushioned position. The company is prepared to supply holders for glass jars as well as flasks. In each case the products being worked are in view of the operator and can be watched as the process continues.

The machine is available with a platform to 10 ft. in maximum area. The platform is covered with metal, rubber or composition board and is supported by an aluminum casting.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9691



"...it's the bushing that makes the wHOLE difference"

To maintain maximum accuracy in drilling operations, use the bushing that's precision made for the job...use Acme. Write for catalog.

Acme Industrial Company
Makers of Hardened and Ground Precision Parts
215 N. LAFLIN STREET • CHICAGO 7, ILLINOIS

THE SERVICE SHOP TO INDUSTRY FOR MORE THAN 25 YEARS

If you write maker identify as IEN - 9692

Be fresh... Stay fresh

wear a **DUPOR** water-cooled **SMOKE MASK**

Equipped with "Nod & Shake" Fog-Proof, Gas-Tight Goggles

For combined eye and lung protection of painters, foundrymen, smelters, oil refiners, chemists, firemen, etc.

Sponge filter, soaked in water before wearing, keeps out paint spray, smoke, fumes, dusts; provides cool, clean air at every breath. Air-tight goggles give absolute eye protection. Goggles are fog-proof too.

Sample sent $5.00 ea.

H. S. COVER, South Bend, Ind.

If you write maker identify as IEN - 9693

Announcing... great new 64-page BLACKHAWK® IDEA BOOK

1001 shortcuts to save you time, money, materials with hydraulic tools and hand tools.

Here's the greatest collection of ideas ever compiled on new uses for hydraulic tools and hand tools. IDEA BOOK gives you methods developed by hundreds of users of BLACKHAWK equipment . . . stimulates you to create your own ideas to solve special problems. So—*send for it!* You'll want to read every page—you may find a "gold mine" in any *one* picture.

BLACKHAWK MFG. CO., Dept. M1592, Milwaukee 1, Wis.

WRITE TODAY FOR FREE COPY...FIND OUT HOW YOU CAN WIN BIG CASH AWARDS FOR ORIGINAL IDEAS USING BLACKHAWK EQUIPMENT

If you write maker identify as IEN - 9694

STRIPS WIRE CLEAN IN 2 SECONDS!

IDEAL Stripmaster
(Patent Pending)

6 MODELS—for all wire gauges 8 to 22—Also POST—FM and TV down lead wires.

Easier, Faster—No Cut Fingers!... One Light Squeeze Strips Clean... Can't Crush Wire. Unique in design—unique in performance! One easy squeeze strips up to 7/8 in. Exclusive "automatic" feature holds jaws open while wire is removed — positively prevents crushing. Just insert wire, squeeze and release! Weighs only 10 oz. — fits in pocket. Blade can be changed in a jiffy! See the Stripmaster at your IDEAL Distributor's or mail coupon below.

SOLD THROUGH AMERICA'S LEADING DISTRIBUTORS

OTHER WIRING TOOLS
- ☐ Voltage Testers
- ☐ Fish tape, rods and pullers
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- ☐ Fuse clip clamps
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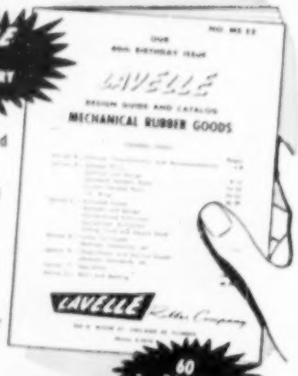
IDEAL INDUSTRIES, Inc
1106 Park Avenue, Sycamore, Illinois
Please send free catalog information on Stripmaster and other wiring tools as checked.

Name _____
Company _____
Address _____
City _____ Zone ____ State ____

If you write maker identify as IEN-9695

INDUSTRY HAS NEVER SEEN ANYTHING LIKE IT!

LAVELLE 40th ANNIVERSARY ISSUE



Characteristics And Recommended Usage For Natural And Synthetic Rubber Polymers, And Complete Design Data On Mechanical Rubber Specialties!

60 PAGES

LAVELLE Rubber Company

1811 WEST HUBBARD STREET • CHICAGO 22, ILLINOIS

If you write maker identify as IEN-9696

Machine "down-time" cut 40%

with HYPRESSURE Jenny STEAM CLEANER

Your machines are back in production almost twice as fast, if they are Hypressure JENNY steam cleaned before repairs! Actual time studies show that up to 40% of the costly time of skilled mechanics is lost fighting grease and dirt.

Hypressure JENNY not only saves precious time, but pays plus dividends in stepped-up production, fewer lost-time accidents, lower fire insurance premiums, and increased personnel efficiency.

Write for complete information about this modern aid to increased production. There's no obligation, so why not do it now?

There is a Hypressure Jenny Steam Cleaner for every Mill . . . Mine . . . Factory . . . Farm and Automotive need

Distributors in all parts of the world — For local representative see classified Telephone Directory

HYPRESSURE JENNY DIVISION HOMESTEAD VALVE MANUFACTURING CO. Serving since 1861 P. O. BOX 85 CORAOPOLIS, PA.

If you write maker identify as IEN-9697

SPEED-TROLS SAVE SPACE IMPROVE PLANT SAFETY

Speed-Trol's compact, completely self-contained design has enabled us to save much valuable space and improve plant safety, reports Paul B. Thompson, Purchasing Agent, The Federal Leather Co., Belleville, N. J. We have installed about 12 Speed-Trols on various types of machinery during the past year . . . they are adaptable to our many requirements and we are completely satisfied with their performance.

70 ILLUSTRATIONS showing how Sterling Electric Power Drives reduce production costs. Write for Bulletin No. A-12.

STERLING SPEED-TROL GIVES YOU VARIABLE SPEED CONTROL NECESSARY FOR:

Equipment adaptation to: Sequence synchronization—operators' abilities—load variations due to differences in quantity, quality, weight, size, texture, hardness or shape of material to be processed, machined, conveyed, blended, mixed, etc.

Process control of: Temperature—viscosity—level—pressure—flow—etc.

Time control of: Baking—drying—heating—cooking—pasteurizing—soaking—chemical action—etc.

With Speed-Trol you get the maximum in production, plant efficiency, quality and profit.

STERLING ELECTRIC MOTORS

Plants: New York City 51, Van Wert, Ohio; Los Angeles 22, Hamilton, Canada; Santiago, Chile. • Offices and distributors in all principal cities.

USEFUL INFORMATION

(Continued)

If you write maker identify as IEN-9698

MANAGEMENT . . . Ideas on plant maintenance presented in book that reports 1952 Conference papers

Clapp & Poliak Inc.
341 Madison Ave., New York 17, N. Y.

Questions and answers, in addition to the transcripts of formal papers, present many ideas for you in the 182-page book, "Techniques of Plant Maintenance—1952". List price is $6. They cover such subjects as maintenance costs, how to maintain plant buildings, preventive maintenance, problems of small, medium and large plants.

If you write maker identify as IEN-9699

METERS . . . Film traces development from simple instruments to complex process controls

Taylor Instrument Cos.
60 Ames St., Rochester 1, N. Y.

"Instruments at Work", company's color sound film produced last year, now is available without charge for group showing. It shows what instruments are and what they do, traces their growing complexity. Running time is 30 minutes.

If you write maker identify as IEN-9700

PAINTING . . . Suggested color combinations for painting plant interiors are shown by color chips

Devoe & Raynolds Co.
787-A First Ave., New York 17, N. Y.

Production areas, corridors and stair wells, other plant areas such as offices and rest rooms are treated individually in new 8-sheet file-size book, "Interior Color Suggestions for Industrial Plants". Color chips show suggested combinations of paint colors for ceiling, sidewall and dado. Each color carries the company's designation.

If you write maker identify as IEN-9701

PLASTICS . . . Fabricating suggestions in loose-leaf specification book on laminated plastics

Formica Co.
4612-22 Spring Grove Ave., Cincinnati 32, Ohio

"Data for Industry", company's specification book previously reviewed IEN 2730-50, has been revised from cover to cover. Information on laminated plastics now is presented in line with new NEMA test standard methods. The 130-sheet book, list price $1, covers types, properties, forms, applications, makes specific suggestions on fabricating methods.

If you write maker identify as IEN-9702

PRESSES . . . New series of articles in house publication on production meaning of hydraulics

Denison Engineering Co.
1158-62 Dublin Road, Columbus 16, Ohio

"Denison Press" has started a new series of special articles in its Vol. 3 No. 5 issue on basic hydraulic press principles and what they mean in terms of production. Controlled pressure, the topic in this issue, is described as to how it works and how it is applied in assembly of fragile parts. Your name will be added to the list to receive the house publication.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . . Descriptions . . . Ratings . . . See Page 50

If you write maker identify as IEN-9703

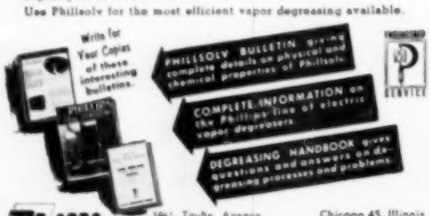
PHILLSOLV

THE ONE DEGREASING SOLVENT THAT GIVES YOU

- More thorough cleaning
- More degreased parts per gallon
- Lower cost per unit cleaned

PHILLSOLV puts real efficiency into your degreasing. Phillsolv's heavier vapors, greater solvency and higher vapor temperatures clean better, work faster, go farther than other solvents. More solvent condenses on each part for more thorough degreasing. Phillsolv's higher temperatures dispel moisture preventing rust and pitting. These factors add up to higher production, lower cost to you.

Use Phillsolv for the most efficient vapor degreasing available.



Phillips 1461 Touhy Avenue Chicago 45, Illinois MANUFACTURING COMPANY ENGINEERED METAL CLEANING EQUIPMENT

If you write maker identify as IEN-9704

32 Pages of Helpful Information on Dust Recovery Systems

If you are now using dust or fly ash recovery equipment in your plant—or are planning installation of such equipment now or later—you will find this new Multiclone booklet full of helpful information. Illustrations and diagrams outline basic principles of dust recovery and how to utilize them for maximum efficiency . . . how to simplify your installations . . . how to conserve valuable plant space . . . how to get high recovery over a wide range of particle sizes, etc. *A copy of this booklet should be in your files for reference and assistance in dust recovery applications. A free copy will gladly be sent you on request. Write today while supplies are adequate.*

WESTERN Precipitation CORPORATION

ENGINEERS, DESIGNERS & MANUFACTURERS OF EQUIPMENT FOR COLLECTION OF SUSPENDED MATERIALS FROM GASES & LIQUIDS

Main Offices: 1851 WEST NINTH STREET, LOS ANGELES 15, CALIFORNIA
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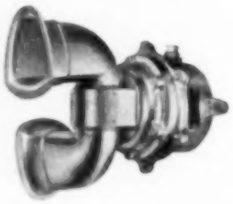
PRECIPITATION CO. OF CANADA, LTD., DOMINION SQ. BLDG., MONTREAL

If you write maker identify as IEN-9705

FEDERAL HORNS save precious time too!



Warnings, alarms, routine plant signals . . . Federal vibratory horns perform them all superlatively . . . *and* give you the added advantage of following short, quick code impulses which enable you to page your executives and foremen above heavy industrial noises . . . eliminates "searching parties" . . . outperforms gong signals.

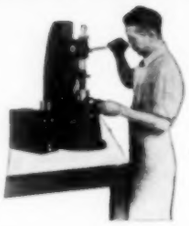
Write for Federal's Industrial Signals Catalog now. There you'll find a complete line of heavy-duty, precision-built horns, one of which will be ideal for your application.

FEDERAL ENTERPRISES, Inc.
Formerly Federal Electric Company, Inc.
8745 South State Street Chicago 19, Illinois

If you write maker identify as IEN-9706

SPRING TESTING: The Solution of Many a Baffling Problem!

HERE'S WHY



When the performance of products with a spring mechanism varies, experience has proved that the most likely source of the trouble is the spring. It may be that certain springs are out-of-square, or have hidden flaws in the wire, or may be too weak or too strong for their intended purpose. Check the springs FIRST! You'll find it will save you many tedious hours of hit-and-miss trouble shooting.

LINK Spring Testers

For speedy and accurate testing of springs—compression, tension or torsion—get a LINK Spring Tester. Hand operated instrument for spot-check, laboratory, and inspection. Also motor-driven instruments for production testing. Moderately priced. Send for complete information.

LINK ENGINEERING CO.
13848 Elmira Detroit 27, Mich.

Write for Catalog

If you write maker identify as IEN-9707

FAMOUS ERA BEAM COMPASS

A HIGH GRADE INSTRUMENT

Used by Leading Draftsmen and Designers for INKING and PENCIL DRAFTING

A fine precision tool. Hair-line adjustment quickly made and maintained by spring-loaded knurled thumb rollers. No screws or clamps. Lead expeller for easy control of lead length. Slides instantly interchangeable to any beam length. Made of anodized aluminum, stainless satin finish. Beam lengths from 7" to 100"

Combination Square

TRAMMEL HEADS

Make Accurate Compass, Height Gage Outside and Inside Calipers

Heads chrome plated, screw parts protected by cadmium plating, scriber points made of hardened tool steel. Perfect for work on wood, plastic, sheet metal, linoleum, die or tool layout. Hundreds of uses. Comes complete with plated head, scriber points, pencil tips, special caliper points.

WRITE FOR LITERATURE.

ENGINEERING RESEARCH ASSOCIATES, INC.
3475 East Nine Mile Road Hazel Park, Michigan

If you write maker identify as IEN-9708

Production Soldering
BETTER JOBS FASTER
more Economically

Save Labor, Solder . . .
Increase Production

This new MOGUL unit is built to deposit silver, lead, and tin base solders in a liquid or semi-liquid form . . . faster, cleaner . . . to any constant moving part. This new automatic soldering gun replaces the soldering bath, hand soldering, and in many cases, expensive fixtures. Quickly adapted to various size parts. Adjustable to speed of work . . . gives pin-point location for cleaner seams.

BETTER WORK APPEARANCE

Deposits solder or brazing wire to the exact spot for cleaner seams. This new MOGUL soldering gun is now in wide use, saving time and money, increasing production, and turning out a better-looking product.

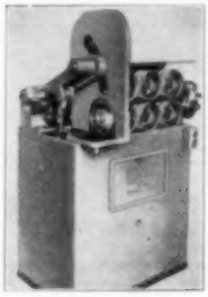
Write today for new MOGUL SOLDERING GUN bulletin

METALLIZING COMPANY OF AMERICA
Dept. IEN • 3520 West Carroll Avenue
Chicago 24, Illinois
Telephone: SAcramento 2-3710

If you write maker identify as IEN-9710

CUTTING . . Automatic machine for hose, plastics, 1 to 144 inches

Source: FIDELITY MACHINE CO.
3912 Frankford Ave., Philadelphia 24, Pa.



Cuts square and true

Disc type cutter mounted on a pivoted arm moves downward in this new machine to cut hose or extruded plastic that has been fed forward through a die wheel by three sets of adjustable grooved wheels. The feed mechanism that determines the amount of forward movement is adjustable in stepless progression to produce pieces from 1 to 144 in. in length. The die wheel can be rotated to present an opening correct in diameter for the work being handled at the moment.

As many as 45 pieces can be cut per minute without need for attention by the operator, following initial set-up, other than to keep the machine supplied at the feed end. A counter records the number of cuts, adds one each time the pivoted arm moves downward.

Model A, shown in the illustration, will handle hose ranging in diameter from ½ to ¼ in. or the equivalent extruded material. It occupies a floor space measuring about 3 by 2 feet. The assembly includes connections for a plant water supply and drain to lubricate the disc cutter and the work. A built-in pump and tank can be specified when the machine is supplied on wheels for mobile application. During the downward stroke of the cutter arm and just before the blade contacts the work a small fluid jet lubricates work and blade.

If you write maker identify as IEN-9711

CLEANING . . Portable vacuum machine to pick up plant dirt and waste

Source: SPENCER TURBINE CO.
485 New Park Ave., Hartford 6, Conn.

Ask for Bulletin 102-H

The company announces redesign of its line of heavy duty vacuum cleaning equipment to improve portability, permit movement through standard factory doors or on elevators and assist, by caster mounting of the waste receiver, to dispose of the waste it collects. The line includes equipment rating 3 to 15 hp. with motor or engine drive. Dirt capacity ranges from 3 to 7½ cu. ft. in the removable hopper bottom dirt can.

Mounting is on 18-in. roller bearing wheels. Overall dimensions range from 63½ by 30 by 62 in. to 75 by 47 by 88 inches. Vacuum rating is about 75 and 95 in. of water at the machine. Dirt is separated from the incoming air at an assembly of tubular bags equipped with a hand shaker that is operated from time to time to keep the bags clean. No dirt passes through the multi-stage motor driven blower which operates the machine.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-9712

INDIVIDUAL CUTTING OIL SANITATION
FOR YOUR PLANT!

Here's how to prevent costly spoilage and eliminate foul odors: ask your DOLGE Service Man to take samples of your coolant for *free* bacteriological and chemical analysis. A complete laboratory report will show the correct coolant handling method for *your particular operation.*

Only if tests warrant it will a DOLGE STERIDOL GERMICIDE be recommended — a "tailor-made" preparation to meet *your exact needs.* Used as directed it will not irritate the skin or corrode metals. The cost? Far less than a cent per gallon of coolant!

Write for Booklet "Cutting Oil Sanitation"

STERIDOL
dependable
DOLGE
WESTPORT, CONNECTICUT

If you write maker identify as IEN-9713

Power positioning of material increases production in sheet feeding operation.

perhaps
YOUR PRODUCTION CAN BE INCREASED THROUGH POWER POSITIONING OF TOOLS AND MATERIALS

PORTELVATOR®
has supplied the answer to others.

Start a beneficent chain reaction now; write for
BULLETIN P-507

Twenty-five ton capacity, self loading, self discharging die transfer table.

THE Hamilton TOOL COMPANY
905 HANOVER STREET • HAMILTON • OHIO • U • S • A

If you write maker identify as IEN-9714

NEW MACHINE LEVELING DEVICE

Empco JACK STYLE JS

Where anchor bolts are used, this new Empco Jack Style JS will save considerable time in setting and keeping equipment level.

Tested to support 20 tons and lift 8,000 lbs., this Empco Jack is the answer to any machine installations. Anchor bolt hole through the jack assembly allows clearance for ¾" diameter bolt. This permits the Empco Style JS Jack to be used at the precise spot where equipment was designed to be best supported.

Available in three sizes: 1¼", 2", and 3" (minimum heights) with VI-SORB mounting pads as optional equipment.

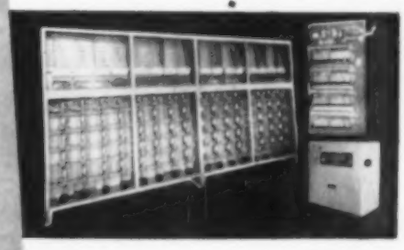
Write for specifications and prices of the complete line of Empco Leveling Jacks today.

EMPCO PRODUCT

THE ENTERPRISE MACHINE PARTS CORPORATION
3737 JEROME AVENUE • DETROIT 12, MICHIGAN

If you write maker identify as IEN-9715

EAGLE . . . . . .
control panels
large or small



Let Eagle Signal turn your control problems to profits. Automatic precision timing will increase quality and production of your industrial process. Eagle will design and build any size panel, complete, ready to plug in and produce for you. See your Eagle representative or write today. No obligation.

EAGLE SIGNAL Industrial Timers
EAGLE SIGNAL CORPORATION MOLINE, ILL.

If you write maker identify as IEN-9716

PILLOW BLOCK BALANCING WAYS

Built in
1,000
2,000
5,000
10,000
20,000
Capacities

Especially suited for large diameter work, as a sub-base can be made of proper height to give necessary clearance for work. Anderson Pillow Block Balancing Ways are precision built with chilled iron discs which rotate with minimum friction on sensitive special bearings. Many manufacturers have endorsed them for efficient, static balancing.

Anderson Bros. Mfg. Co. Rockford, Illinois

Write for Bulletin No. 9-35

ANDERSON BROS. MFG. CO., Rockford, Ill.
Balancing Ways, Roto Checkers, Hand and Power Scrapers, Spotters, Hand and Power Hydraulic Straightening Presses.

If you write maker identify as IEN-9717

Generalift ★★★★★ PALLET BOXES

1. CUT MATERIALS HANDLING COSTS
2. REDUCE STORAGE COSTS

SEND FOR FREE BOOKLET

General ★★★★★ BOX COMPANY
GENERAL OFFICES: 1815 MINER STREET, DES PLAINES, ILL.
DISTRICT OFFICES AND PLANTS: Cincinnati, Danville, N. J., Detroit, East St. Louis, Kansas City, Louisville, General Box Company of Mississippi, Meridian, Miss., Milwaukee, Sheboygan, Winchendon. Continental Box Company, Inc.: Houston, Dallas.

If you write maker identify as IEN-9718

The KING of STROKE and REVOLUTION COUNTERS

Used by the thousands in Auto and Aircraft Factories, Metal Working, Die Casting, Plastic Molding and Stamping Plants.

BETTER beyond comparison
say thousands of users

- Rugged as an army tank, yet operate smooth as a watch.
- Precision built of life-tested Materials.
- Tamperproof Reset.
- Streamlined—All steel housing.
- Complete range of models.

PRODUCTION INSTRUMENT CO.
700-10 W. Jackson Blvd., Chicago 6, Ill.
Please send Catalog of Silver King Counters and Brief Catalog MODERN Counting Devices.
Company _____
Name _____ Title _____
Street _____ City _____ Zone _____ State _____
SR-11

USEFUL INFORMATION
(Continued)

If you write maker identify as IEN-9719

PROCESSING . . What "air processing" means described in three folders based on company's experience

J. O. Ross Engineering Corp.
444 Madison Ave., Room 1802, New York 17, N. Y.

Informal description is employed in three new 6-page folders to tell you about problems involved in treatment of air to change its temperature, humidity, constituents as in drying, baking, heat treating, dust collecting, heating, ventilating, air conditioning. The folders conclude with a word on design and prices. Ask for the series, "Air Processing".

If you write maker identify as IEN-9720

STEELS . . Recommended practice in cutting and forming stainless sheet shown in wall chart

Armco Steel Corp.
701-5 Curtis St., Middletown, Ohio

Twelve operations are illustrated with concise instruction captions in new 25 by 38-in. wall chart, "Cutting and Forming Armco Stainless Steels". They include care in handling, finished surface protection, shearing, snipping, hand sawing, bending, forming in hand rolls, lock forming.

If you write maker identify as IEN-9721

THREADING . . Suggestions on tap selection, application and sharpening in new 20-page booklet

Besly-Welles Corp.
51 Clinton St., Beloit, Wis.

Latest information on taps for standard and Unified threads is included in new "Tap Manual", available on letterhead request. The booklet starts with a word on selection, lists taps by size and class of fit, tabulates basic thread dimensions and tap drill sizes, makes suggestions on speeds, lubricants and angle of cutting edge for tapping various materials. It includes instructions on sharpening taps, lists Unified thread limits.

If you write maker identify as IEN-9722

TUBES . . Properties and fabrication data on steel tubes for elevated temperature and pressure

Babcock & Wilcox Co.
4027-31 Fourth Ave., Beaver Falls, Pa.

Analyses, physical properties, mechanical properties, fabrication, expanding into tube seats, welding are described for the company's carbon-steel pressure tubes in new 4-page Bulletin TDC-142. Size range is given for seamless and welded tube along with notes on effect of carbon content.

If you write maker identify as IEN-9723

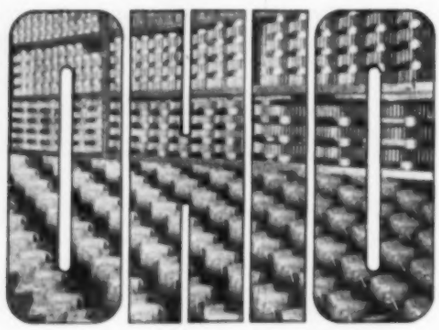
WELDING . . Prizes total $30,000 in contest for papers on arc welded steel fabrication

James F. Lincoln Arc Welding Foundation
22803 St. Clair Ave., Cleveland 17, Ohio

You are eligible to enter the new Mechanical Design Award Program just announced by the Foundation if you have participated in design, planning or manufacturing of a machine or machine component of arc-welded steel construction. Your paper on mechanical design and construction can earn as much as $2,500. Closing date is July 27, 1951. Ask for rules.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-9724



● Ohio Gear is setting New Standards — New Standards in quality and accuracy — New Standards in uniform precision—New Standards in every detail of workmanship.

Whether it is a single gear, sprocket or speed reducer, an intricate drive, or precision engineering, you will find Ohio Gears and Reducers fit your specifications in every detail of material, machining, and finished dimensions. Call your nearest distributor or write direct.

ESTABLISHED 1913
THE OHIO GEAR COMPANY
1345 EAST 179th STREET
CLEVELAND 10, OHIO

OHIO GEARS

If you write maker identify as IEN-9725

for IMMEDIATE DELIVERY on these AMSCO welding products

Contact your AMSCO Distributor.

Amsco AW-79 for Automatic Hardfacing. This new alloy is now available. 5/32" and 3/16" in 22½" ID, 100 lb. coils.

The following Amsco rods are ready for prompt delivery in all diameters, bare and coated.

● Amsco No. 459 ● Amsco No. 217 ● Amsco No. 6
● Amsco No. 1 ● Formfaco ● Chromofaco
● Air-Hardening

Rods below are available in all diameters, *coated only:*

● Amsco HF-40 ● Amsco HF-60 ● Amsco Co-Mang

Tungsten Carbide, V-Mang, and Toolface are also available. Amsco Dieweld can be supplied in all diameters except 3/32", bare and coated. In addition, Carbon Steel Grousers, CS-1 and CS-2 are available now.

A complete line of manganese steel dipper tooth repousses bars and other shapes are available with reasonable delivery dates.

For complete technical details on Amsco Rods, ask your dealer for a copy of Bulletin 650-W.

American Brake Shoe Company — AMERICAN MANGANESE STEEL DIVISION
415 EAST 16th STREET • CHICAGO HEIGHTS, ILL.

Other Plants: New Castle, Del., Denver, Oakland, Cal., Los Angeles, St. Louis. In Canada: Joliette Steel Division, Joliette, Que. Amsco Welding Products distributed in Canada by Canadian Liquid Air Co., Ltd.

If you write maker identify as IEN-9726

TRUSTEEL SHOT and your future

what a PERFECTED TRUSTEEL SHOT means to you

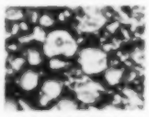
Like everyone else you are interested in lowering cleaning room costs and *TRUSTEEL* Shot has a place in your future. That's because *TRUSTEEL* Shot is setting new records for longer life and lower blast cleaning costs. It is reducing handling costs and maintenance time. Why? Because *TRUSTEEL* NEVER SHATTERS.

Industry has long been searching for an abrasive that won't shatter because doing so ends its effective cleaning life. Annealing and drawing have been tried with some degree of success. But only a true steel shot never shatters. *TRUSTEEL* has the toughness that only steel can give. Then to make it even more durable, *TRUSTEEL* is *fully heat treated,* not just drawn and annealed. As a result, *TRUSTEEL* lasts longer, cleans faster . . . costs less in the long run.

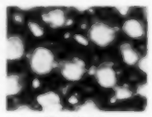
There are big savings ahead for you when you use *TRUSTEEL* Shot.

LIFE COMPARISON

TRUSTEEL vs. CHILLED IRON SHOT



CHILLED IRON after 50 passes



TRUSTEEL after 1500 passes

THIS BULLETIN GIVES YOU THE FACTS—It shows where the average blast cleaning dollar is spent and how savings can be made. Send for your copy today.

TRUSTEEL SHOT — American WHEELABRATOR & EQUIPMENT CORP.
507 S. Byrkit St., Mishawaka 8, Ind.

If you write maker identify as IEN-9728

THE Sutton MOTOR DRIVEN PRESSURE BLOWER

THREE SIZES ¼, ½, 1 H.P.

USE FOR
- EXHAUSTING
- DUST
- SMOKE
- FUMES
- VAPOR
- FORGE BLASTING

CONVEYING COTTON, WOOL, SHAVINGS
COOLING AND DRYING

MADE OF LIGHTWEIGHT CAST ALUMINUM ALLOY, CENTRIFUGAL TYPE. Direction of discharge may be changed to any of eight 45 degree positions. Straight wall construction reduces windage and increases efficiency. Standard 3450 r.p.m. direct-connected 60-cycle ball bearing motor, open or totally enclosed types. Capacities, 100 to 800 cu. ft. per min. at static pressures from ½" to 4".

Write for LITERATURE AND PRICES

Sutton *Manufacturing Corp*
126 W. WILSON AVENUE NORFOLK, VIRGINIA

If you write maker identify as IEN-9729

Put Wiring Anywhere SAFELY

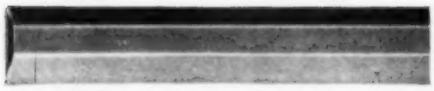
with **NE RACEWAYS**

Where do you need a wire? Across the ceiling . . . down the wall . . . over the floor? Put it there! It's so easy with NE all-metal Surface Raceways. Simply attach the base, lay-in the wires, snap on the capping. No fishing necessary.

Neat, strong, safe and permanent, NE Surface Raceways are inter-connectable to serve every electrical application of 15 to 60 ampere loads. Easy to install . . . easy to change. For offices, stores, institutions and industrial buildings.

XTENSIONDUCT—The quick way to run wires to new outlets . . . to switches . . . to lighting fixtures.

METAL MOLDING—Carries up to 10 conductors. Bends around offsets and columns.



FLORDUCT—For telephone, power and light. Will withstand truck abuse . . . bump-proof . . . mop-proof.

SURFACEDUCT—A complete wiring system providing all types of service up to 60 amperes.

Listed by Underwriters' Laboratories, Inc.
Write for complete details.

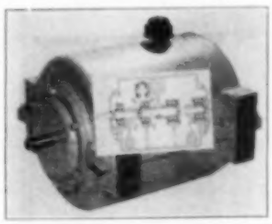
EVERYTHING IN WIRING POINTS TO

National Electric Products
PITTSBURGH, PA.
3 Plants . 6 Warehouses . 42 Sales Offices

If you write maker identify as IEN-9731

VIBRATING . . Centrifugal shaker confines action to horizontal plane

Source: KAYSING IRON WORKS
2703 N. 25th St., St. Louis 6, Mo.



Weights balance vertically

JSCO 135 is a new centrifugal shaker designed for belt connection to a 3-hp. motor. It will vibrate a 1,200-lb. load through a ⅜-in. stroke. This is equivalent to moving about 30 ton of sand per hour a distance of 100 ft. on a pan type conveyor. Overall length, including the 2½ in. shaft extension, is 20⅜ inches. Face to face of the mounting lugs on the two sides is 16 inches. Height is 13¼ inches.

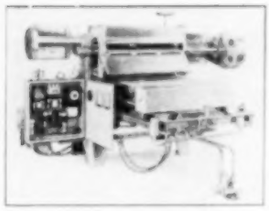
Two off-center weights, equal in size, are mounted on the ball bearing drive shaft inside the housing at the two ends. In the center of the housing, sleeve supported on ball bearings, is a second weight equal to the sum of the other two. This central weight is driven by differential connection to the main drive shaft so it rotates at the same speed but in the opposite direction from that taken by the two equal weights.

The weights are positioned so one is up in counterbalancing position when the two are down. As a result the only two points at which unbalance is in effect are in the horizontal plane to one side and then to the other. True straight line action will be imparted to a screen, conveyor or other free or suspended equipment when the new unit has been correctly mounted in accordance with the maker's instructions.

If you write maker identify as IEN-9732

POLISHING . . Roll type machine to finish flat non-magnetic work

Source: CLAIR MFG. CO.
1004 S. Union St., Olean, N. Y.



Foot valve operates chuck

Nameplates for refrigerators, stoves and automotive trim are intended applications for this new Model 203-A roll type machine. It is a further development of Model 203, which was previously described IEN-9437-51.

The work is held on a flat vacuum chuck capable of securing pieces with small dimensions as well as large ones. Multiple pieces can be placed on the chuck and finished without interference with each other. The work table measures 38 by 36 in. and can be built up to 38 by 48 inches. It provides both in and out and lateral movement adjustable between ¾ and 36 in. in the first case and ½ and 1¾ in. in the second.

Controls are centered on a panel enclosed in a steel housing located to one side. The motors are available in varying speeds to 15 hp. The polishing rolls or buffs are 9 in. in diameter in standard construction but can be specified to 12 inches.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-9733

engineering research keeps NATIONAL FIRST in laminated plastics

HOW MUCH SOCK?

How much energy does a specimen of laminated plastic absorb in foot pounds per inch of notch? This impact tester is very important in the production control of National laminated plastics—very important in the research for better, stronger materials.

National Laminated Plastics
nationally known—nationally accepted

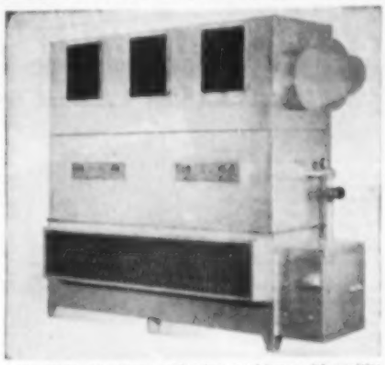
NATIONAL VULCANIZED FIBRE — A tough, horn-like material with high dielectric strength. Excellent machinability. Sheets, Rods, Tubes, Special Shapes.

PHENOLITE — Good electrical insulating material with great mechanical strength; moisture resistant. Sheets, Rods, Tubes, Special Shapes.

NATIONAL VULCANIZED FIBRE CO.
Wilmington, Delaware — Offices in Principal Cities
Since 1873

If you write maker identify as IEN-9734

"Buffalo" EVAPORATIVE WATER COOLERS *for economical, closed system cooling!*



Cool cutting oils, diesels and other machinery with positive temperature control. "Buffalo" Evaporative Coolers pass the hot liquid through a closed system of spiral fin coils. Water spray evaporates the heat into the air stream passed through the unit. Indoors or out, you'll save with "Buffalo" Evaporative cooling. Write today for Bulletin 5000.

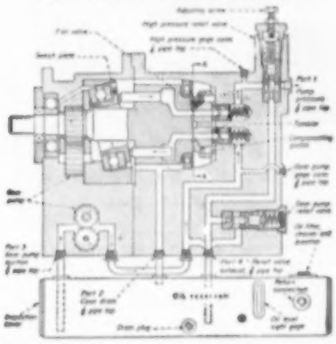
BUFFALO FORGE COMPANY
496 BROADWAY • BUFFALO, NEW YORK
Publishers of "FAN ENGINEERING" HANDBOOK
Canadian Blower & Forge Co. Ltd., Kitchener, Ont.
Sales Representatives in all principal cities

"Buffalo" NEW MODEL "F" EVAPORATIVE COOLERS

If you write maker identify as IEN-9735

HEAVY DUTY HYDRAULIC POWER PUMPS

Pressures to 3000 & 5000 psi



The Oilgear Company announces three new "Fluid Power" heavy-duty constant delivery axial piston pumps. Similar components have been tested and proven in more than 100,000 installations without a single failure on record. Features of these fluid power generators are patented balanced small flat valves with controlled oil film between working surfaces; patented small one piece rolling pistons; patented quiet reverse flow relief valves; 100% supercharge that minimizes oil compression, prevents air entry and assures quieter operation. These units in pressures up to 3000 and 5000 psi are especially suited to heavy duty pushing, pulling, lifting, lowering and maintaining high static loads on large clamping rams; for use in the iron, steel, metal working, plastic, automotive, rubber, printing, lumber and textile industries. For illustrated descriptive and application data, write for Bulletin 46601. THE OILGEAR COMPANY, Dept. A, 1567 West Pierce Street, Milwaukee 4, Wisconsin.

If you write maker identify as IEN-9736

MANY INDUSTRIAL ROLL PROBLEMS are solved by using

SHAF-TITE* ROLLS

Minimum Sizes 3" diameter and 3" face length

Many patented constructions provide strongest possible shaft setting. Your choice of many different types and materials—wood, rubber, iron, brass, stainless steel plastic, etc. Whatever your roll problem, put it up to Rodney Hunt.

SEND FOR NEW CATALOG NO. 48
Most complete publication of its kind

Industrial Roll Division
RODNEY HUNT MACHINE CO.
*Reg. U. S. Pat. Off. — 173 Main Street, Orange, Mass.

If you write maker identify as IEN - 9737

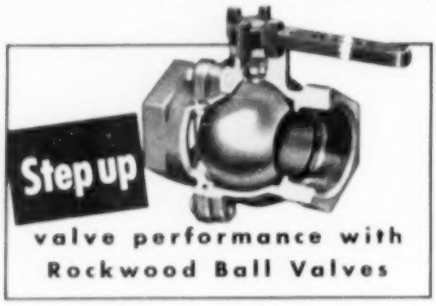
Know the scope of the MARSH line of pressure gauges

There are literally thousands of combinations of types, ranges, case styles and connections in the broad Marsh line of pressure, vacuum and compound gauges. As a result, gauge requirements that would be "special" to others are often standard to Marsh.

This means that we can meet your gauge needs better and more economically . . . whenever the service condition, quantity or design requirement. To know the scope of Marsh Instruments just ask for the new fact-filled catalog.

MARSH INSTRUMENT CO.
Sales affiliate of Jas. P. Marsh Corp., Dept. A, Skokie, Ill.
Export Dept.: 155 E. 44th St., New York 17, N. Y.

If you write maker identify as IEN - 9738



Get full *round* flow in a quarter turn!

With Rockwood Ball Valves, the flow is as round as the pipe itself. No turbulence. Minimum friction loss. *And they stay leakproof.*

You'll also like their extra durability. Chrome-plated, floating bronze ball resists scratching, pitting, and abrasion.

Use these valves for handling water, air, carbon dioxide, nitrogen and other gases, paraffin and asphalt base petroleums, alcohol, paper fluids, and many other types of fluids and gases. Tested by Underwriters' Laboratories, Inc. For complete details send for free Bulletin V-4. Rockwood Sprinkler Company, 40 Harlow Street, Worcester 5, Mass. Distributors in all principal cities.

ROCKWOOD BALL VALVES
THE FLOW IS AS ROUND AS THE PIPE ITSELF

If you write maker identify as IEN - 9739

The Combination for Your Stitching Problems

INLAND
SPEED-FLO
STITCHING WIRE
(25 Lb. Coils)

+

INLAND
25 Lb. Controlled
Stitching Wire
SPOOL

is unequalled for *faster, better,* and *trouble-free stitching* at *lowest cost!*

Fits all makes of machines. Every inch of wire is used. The Inland 25 Lb. spool is automatic-all-metal or equal to a lifetime of hard service. Speedflo Wire also available in 5, 10 and 50 lb. coils.

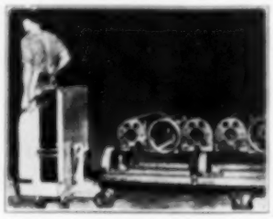
Save time, wire and temper! Ask about this combination without obligation

INLAND WIRE PRODUCTS CO.
3963 South Lowe Avenue Chicago 9, Illinois

If you write maker identify as IEN - 9740

TRUCK . . Power lift tractor handles semi-live skids, rates to 1 ton

Source: RAYMOND CORP.
3592 Madison St., Greene, N. Y.



Lifts and takes it away

New design of the company's Rider-Type Spacemaker electric truck provides for service as a tractor combined with ability to apply the required power to lift one end of a semi-live skid so the tractor and the two wheels on the skid divide the load between them. Connection between skid and tractor is in a swivel arrangement to permit steering. Operation is to 5 mph. with a capacity load.

The truck employs the original Spacemaker design in which motor connection is to the left rear wheel which constitutes the driving and steering mechanism. The right rear wheel is a swivel caster. The two front wheels are free-turning. The arrangement permits turning the truck alone at a right angle within its length when no skids are being handled.

If you write maker identify as IEN - 9741

LIGHTING . . Overhead fittings, disconnect design for ground servicing

Source: THOMPSON ELECTRIC CO.
1139 Power Ave., Cleveland 14, Ohio

Safe to work on

New pole-top fittings with a stainless steel operating cable have been added to the company's line of disconnect equipment with which overhead lighting fixtures can be lowered to the ground and serviced while their circuits are open. Application can be made on standard metal poles in which a hand hole and pulley are provided at ground level for operator access to the stainless steel cable. Releasing this cable disconnects the fitting at the pole top to lower the fixture. Pulling it up again reconnects the fitting to establish the circuit.

Mast-arms for the horizontal extension at the pole top range from 2 to 12 ft. in length in 2 ft. steps. The equipment is available in single and double arm models and is particularly suited for use in plant yards and at boundary fences.

Identify as IEN - 9742

Rolled edge stainless flat wire, keystone shapes, half rounds and various other non standard shapes are being rolled by Pittsburgh Rolling Mills. The wire is supplied bright annealed to user's specifications. It is being used for manufacture of such items as cotter pins, windshield wipers, carburetor and aircraft parts, oil-well screens.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 58

If you write maker identify as IEN - 9743

ROTARY UNIONS
(Trade Name)

Type "S" Rotary Union

Mechanical Maintenance . . . Zero

The secret of ROTARY UNIONS' long service lies in its novel construction, which takes the strain off moving and sealing parts. Service of three years or more, *without any mechanical maintenance* is common. Standard models are used as connections for revolving shafts and drums for heating or cooling purposes for applications such as Steam up to 150 PSI, Hot Oil to 500° F, Coolants, Air, Gases, Water, Brine, Vacuum, and Alternate Mixtures at speeds up to 1000 RPM. Special models for higher speeds, pressures, and Dowtherm. Contact our nearest office for engineering consultation or write Dept. 9E for catalog.

"Where *Good Connections* Count"

PERFECTING SERVICE COMPANY
332 Atlanta Avenue (Home Office and Factory) Charlotte, N.C.
Offices in Chicago · Cleveland · Philadelphia · Providence · New York · Montreal · Toronto

If you write maker identify as IEN - 9744

hydraulic PUMPS

3 types, 11 sizes, for continuous pressures up to 1000 p.s.i. . . . in some sizes, up to 1200 p.s.i. continuous, 1500 intermittent. Deliveries from .4 g.p.m. at 1800 r.p.m. to 40 at 1200.

GEROTOR MAY CORP., Md. Ave. & Oliver St., Baltimore 3, Md. . . Phone MUlberry 8585

If you write maker identify as IEN - 9745

MORE SPEED MORE SUPPORT

PADDOCK BALL-BEARING BAND-SAW GUIDES

When a 36" machine is equipped with Model 20 guides as pictured, and the guides are adjusted to hold the blade at a 45° angle, material 22" wide can be cut to any length. The lower picture shows angular adjustment. Interchangeable ball-bearing wheels run with saw-blade and support working portion of blade as if in a frame. Guides come in several sizes. Write, giving size of machines and material being cut. We will gladly provide information, make recommendations and quote prices. Write direct to . . .

PADDOCK TOOL COMPANY
Guide Makers Since 1920
1418 Walnut Street ★ Kansas City 6, Mo.

Paddock
BALL-BEARING
BAND SAW GUIDES

If you write maker identify as IEN - 9746

Your copy is ready *

Write also for catalog on Fountains

* Page after page of information and illustrations on the complete Halsey Taylor line

THE HALSEY W. TAYLOR CO., WARREN, O.

If you write maker identify as IEN-9747

Order Drill Jig Bushings from EX-CELL-O's Huge Stock

EX-CELL-O maintains a stock of over a quarter-million drill jig bushings in Detroit and also ample supplies in New York, Los Angeles, and Toronto. Orders for standard sizes can be filled immediately. Write today for your free copy of Ex-Cell-O Bushing Catalog No. 35371.

XLO 51-9

EX-CELL-O CORPORATION
DETROIT 32 • MICHIGAN

If you write maker identify as IEN-9748

CUTLER-HAMMER
Small Drum Controllers
for Every Purpose

● Here are small drum controllers of every size and for every purpose . . . reversing and non-reversing . . . single and multi-speed . . . for single phase, separate winding, reconnected winding and other squirrel cage motors . . . with radial or tear drop handle, rope, or shipper rod lever actuation . . . surface, cavity or switchboard mounting.

But over and above these features are the concern for correct design, the integrity of engineering purpose and excellence in manufacture that have made Cutler-Hammer products the standard of performance everywhere. Insist on the genuine; it costs no more. CUTLER-HAMMER, Inc., 1378 St. Paul Ave., Milwaukee 1, Wisconsin. *Associate:* Canadian Cutler-Hammer, Ltd., Toronto, Ont.

Where These Controllers Can Be Used . . . On

Woodworking machines
Small overhead hoists
Machine tools
Conveyors
Tire building machinery
Commercial laundry equipment
Electrically operated doors
Other small motor driven processing equipment

CUTLER-HAMMER
MOTOR CONTROL
C-H

If you write maker identify as IEN-9750

CUTTING . . Engine driven machine operates diamond blade to cut concrete

Source: FELKER MFG. CO.
1130 Border St., Torrance, Calif.

6½ in. with 18 in. blade

Model 252 is new design of the company's Di-Met concrete cutting machine, previously described IEN-2342-51 in a Model 250. The new assembly employs the same 13½-hp Wisconsin air cooled engine which drives the diamond blade and also supplies power to the rear wheels through a stepless variable speed reducer and friction drive. Added to the assembly is a new double acting hydraulic jack that raises or lowers the diamond wheel to the work through connection to the front wheel supports.

Cut depth is limited by an adjustable stop. The machine can be steered with the rear wheel position locking after establishing a straight line of travel. Both front and rear guides are standard equipment.

Wheel guards hinge at the top center, the front half lifting to expose the blade for close operations as in curb cutting. The blade is equipped with slotted collars to eject coolant centrifugally around the entire rim. Water for this purpose can be fed from a tank on the machine through a pressurizing pump or through an outside connection from an existing pressure water supply. The blade can be mounted at either end of the 1¾ in. spindle.

If you write maker identify as IEN-9751

TESTING . . Electrical apparatus for quantitative chemical analysis

Source: FISHER SCIENTIFIC CO.
719 Forbes St., Pittsburgh 19, Pa.

Base price $425 to $840

Electro Analyzer is a new unit of laboratory apparatus available in two and four station assemblies. It applies in quantitative determination of elements in a solution by plating upon an electrode and then weighing to find the amount that has been plated. Each station is equipped with its own independent components for stirring, heating and control. Power is supplied at each station at 10 volts and 10 amp. essentially free from ac ripple. A jacketed mercury cathode cell can be specified to plate undesirable elements out on mercury which then is withdrawn to leave a clean sample ready for direct analysis.

The equipment is assembled in a rectangular housing with a Formica front panel on which electrical outlets, controls and stirring motors are mounted. Operation is on 110-volt ac.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-9752

International Carton Stapling Machine cuts costs $28,000 a year

Harrison Steel Cabinet Co., Chicago manufacturer of kitchen wall, sink, and base cabinets saves $28,000 a year with an International Retractable Anvil Carton Stapling Machine.

Formerly, the company packaged 300 units in 8 hours, using 13 men to set up and seal the corrugated cartons. Now, with only 6 men . . . one operating the stapler, the rest packing . . . Harrison closes 600 cartons in 8 hours.

International Carton Stapling Machines will save you as much as 50% on shipping costs . . . write for details.

INTERNATIONAL STAPLING MACHINES
INTERNATIONAL STAPLE & MACHINE COMPANY
800 East Herrin Street, Herrin, Illinois

If you write maker identify as IEN-9753

SPEED UP/ with HANSEN

1001 Uses

Hansen speeds attaching wires in radios, TV, screens, aerials, etc.

Lip tackers available for tacking gaskets, channels and other raised surfaces.

— the TACKER that SAVES TIME . . STEPS . . MATERIALS

SAVES TIME in all types of tacking and fastening. Fast, easy one-hand operation. Tacker operates fast as you can grip.

SAVES STEPS. Self-contained. Ready for instant, continual use. Vest-Kit for quick refills. No back-tracking.

SAVES MATERIALS. Balanced design insures accurate, precision driving. Economical, efficient use of materials.

REQUEST BOOKLET

36 MODELS
80 STAPLE SIZES

A.L.HANSEN MFG. CO.
5051 RAVENSWOOD AVE. CHICAGO 40 ILLINOIS

If you write maker identify as IEN-9754

Whatever your sanding problem
. . . on wood, metal, plastic

. . . there's a SUNDSTRAND Straight-Line Action Air Sander to solve it!

No swirls, no pressure marks, no fatiguing vibration! Used throughout the world for: Wood finishing . . . building materials, furniture, cabinets, wood parts, etc. • Plant production and maintenance work • Finishing metal and plastic parts • Truck, car and machinery refinishing • Both single and double pad models are available. Ask for bulletin 1610.

SUNDSTRAND

SUNDSTRAND AIR SANDERS
SUNDSTRAND MACHINE TOOL CO.
PNEUMATIC DIVISION, ROCKFORD, ILLINOIS

If you write maker identify as IEN-9755

New MOTOR Catalog

GET THIS COMPLETE LISTING of electric motors for every purpose. Shows motor types, construction features, ratings, mechanical and electrical modifications available, NEMA definitions and much other useful data to help you.

To get your copy, call your nearby Allis-Chalmers District Office or send coupon today.

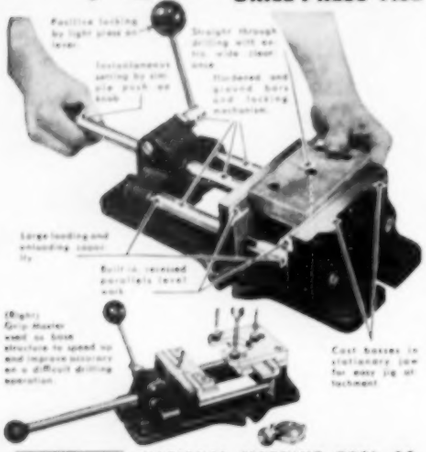
ALLIS-CHALMERS A-3525
PO Box 512
Milwaukee 1, Wisconsin
Please send me your Handy Guide to Motors (5186052).
Name
Company
Address
City State

ALLIS-CHALMERS

If you write maker identify as IEN - 9756

Speed-up DRILL PRESS OPERATIONS

WITH THE HEINRICH *Grip-Master* SCREWLESS DRILL PRESS VISE

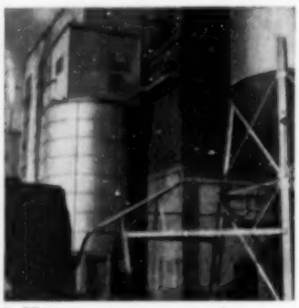


Ask your dealer for demonstration or write for details.

NATIONAL MACHINE TOOL CO.
DEPT. 172-J
RACINE, WISCONSIN

If you write maker identify as IEN - 9757

KEEP UNLOADING AND STORAGE COSTS DOWN



with **the AIRVEYOR**

This pneumatic conveyor offers many concrete savings for conveying dry: pulverized, crushed, and granular materials. Reduced purchase price in bulk . . . cost of unloading and storing. Clean, dustless operation, rapid unloading, convenience in storing and reclaiming are just a few of the advantages of this pneumatic conveyor.

If you have a bulk materials handling problem, may we suggest you allow us to make a study of your conditions. We will be glad to submit our recommendations, based solely on your particular requirements. No obligation, of course. Write for literature on the Airveyor.

FULLER COMPANY, Catasauqua, Pennsylvania
Chicago 3—120 So. LaSalle St.
San Francisco 4—620 Chancery Bldg. A-118

Fuller DRY MATERIAL CONVEYING SYSTEMS AND COOLERS • COMPRESSORS AND VACUUM PUMPS • FEEDERS AND ASSOCIATED EQUIPMENT

If you write maker identify as IEN - 9758

Keep floors dry and safe with Carey Asbesto-Sorb

oil-grease-liquid *absorbent compound approved by Underwriters' Laboratories, Inc.*

Let thirsty, fire-resistant Carey Asbesto-Sorb "soak up" danger underfoot—keep your floors dry and safe, prevent accidents. Recommended for use on all floor surfaces. Economical, a little absorbs a lot! Ask your Carey Industrial Sales Engineer for a sample—or mail coupon today

Send for **FREE** *Sample!*

SERVING INDUSTRY SINCE 1873 **Carey**

THE PHILIP CAREY MFG. CO.
Dept. A5-2, Lockland, Cincinnati 15, Ohio
Please send me FREE sample of Asbesto-Sorb
Name
Company
Address
City Zone State

If you write maker identify as IEN - 9759

FABRICATING . . Water tight door and frame for vaults, bulkheads

Source: OVERBEKE-KAIN CO.
20961 Aurora Road, Bedford, Ohio

No leaks assured

The door in this new water tight steel assembly is fitted with a neoprene gasket in replaceable arrangement. It is mounted on hinges equipped with stainless steel pins and bronze bushings in a design that permits dogging on both hinge and latch sides. The frame is available with a ¼-in. formed steel plate or with a larger plate that serves as a complete wall unit.

The front panel on the door is 11-gage galvanized steel. The back panel is 16-gage galvanized with ¼-in. angles. Between the two is Fiberglas 1½ in. in thickness. Aluminum, stainless steel or other non-corrosive material can be specified. A brass lock with lever handles on both sides and manganese bronze dogs are standard equipment.

Five clear openings range from 26 by 60 in. to 36 by 66 in. with either round or square corners on the doors and frames. Sizes other than standard can be supplied to special order. A bronze framed fixed light also is optional.

If you write maker identify as IEN - 9760

INSULATING . . Steel structure suspends acoustical tile under ceiling

Source: MID-WEST ACOUSTICAL & SUPPLY CO.
20000 W. Lake Road, Cleveland 16, Ohio

For quick safe erection

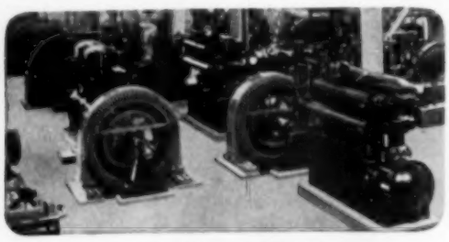
An I-beam made of galvanized formed steel, an inverted tee and an ell of the same material, a fiber spline and assembly clips make up a new steel structure for suspension beneath a ceiling to take standard acoustical tile measuring 12 by 12 in. to 24 by 48 inches. Trade name is Acousti-Rail. The I-beam is supplied in 12-ft. lengths and is secured by a wire clip or wire ties to a conventional 1½ in. channel or bar joist in the ceiling. Lengths are joined by snap-in splicers. The transverse members ride on the I-beam flange at spaces to take a given tile. The fiber spline applies between adjacent tile edges to seal the assembly.

Identify as IEN - 9761

Labelon is the plastic-faced mark-sensitive adhesive-backed tape on which you can write identification or make pertinent notes to stick up at strategic points. Now the company adds a couple of suggestions. One is to identify a finished paint job when you want to remember who made the paint and what type it was against the day a new paint job is required. The other is to identify electric circuits by switchbox source, voltage, current characteristics.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9762



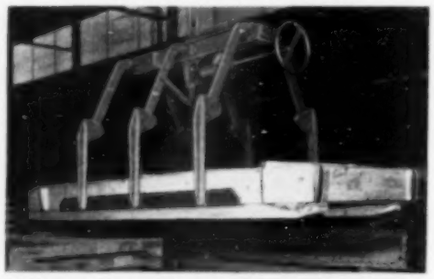
Celanese Corp. Uses 6420 Horsepower of Frick Refrigeration

Fourteen Frick refrigerating machines are in operation at the Amcelle plant of Celanese Corporation of America, near Cumberland, Md., makers of chemical yarns. Most of these ammonia compressors have been in use since 1929. The motors driving the new vertical machines, shown in the foreground, are each of 1250 hp.

This is a large-scale example of the dependability and economy of Frick ammonia refrigeration. Power requirements, when operating in summer weather on air conditioning loads, are only 0.70 hp. per ton of refrigeration.

DEPENDABLE REFRIGERATION SINCE 1882
FRICK CO.
WAYNESBORO, PENNA. U.S.A.
Also Builders of Power Farming and Sawmill Machinery

If you write maker identify as IEN - 9763



HERE'S SHEET HANDLING ECONOMY

No better demonstration of the efficiency, flexibility and economy of C-F Lifters can be made than to watch this 5 ton C-F Lifter handle all sheet steel movement in this busy Chicago district warehouse.

C-F Lifters have quick opening jaws with infinite opening and closing adjustments, permitting them to handle a wide variety of sheet widths—wide bearing angles that safely lift sheets without crimping edges—and control to permit close quarter operation—positive jaw controlling mechanism that holds the jaws open in any position—these and many other exclusive features make C-F Lifters a good investment in materials handling equipment.

C-F Lifters are made in manual and motor operated models in sizes to handle from 2 to 60 tons in standard and semi-special designs.

Write for the Bulletin "C-F Lifters"—it describes the advantages and economies C-F Lifters can bring to your sheet handling jobs.

CULLEN-FRIESTEDT CO.
1310 South Kilbourn Avenue • Chicago 23, Illinois

If you write maker identify as IEN - 9764

MICO ENGRAVERS

An accurate inexpensive and portable machine for engraving name plates and panels, forming small molds and dies, and profiling small part. Geometrically correct for true three dimensional work. Accurately duplicates master copy in metals, plastics or wood. Rugged, sturdy construction.

COMPARE THESE SUPERIOR FEATURES

- Engraves in 2 or in 3 dimensions.
- Pantograph permits 4 reduction ratios.
- Micrometer depth control graduated in thousandths of an inch.
- High speed, ball bearing spindle.
- Chuck ¼" to take variety of small tools, burrs, mounted points, as well as standard cutters.

Send for Illustrated Catalog

MICO INSTRUMENT COMPANY
81 Trowbridge Street Cambridge, Mass.

If you write maker identify as IEN - 9765

CLEAN CUT W-I-D-E SHEARING *to .005 inch!*

with **FRIED** *Liftveyor**

*Patented

The answer to flexing—*regardless of material*—in close tolerance shearing of lighter-gauge materials when shearing to the back-gauge.

The Fried Liftveyor supports wide sheets for close-tolerance shearing . . . then moves them without marring to safety beyond shear frame.

OPERATION: Ball point plungers that support sheets are pneumatically actuated by foot treadle **synchronized with your shear.** Sheared strip lowers to conveyor . . . and plungers return for next support assignment!

Liftveyor now may be ordered with air-operated scrap-eliminator.

INVESTIGATE! Write for Bulletin giving complete facts & figures on entire line of Fried Strip-Handling Equipment.

FRIED STEEL EQUIPMENT MFG. CORP.
638 EAST 149TH ST., NEW YORK 55, N. Y.

If you write maker identify as IEN - 9766

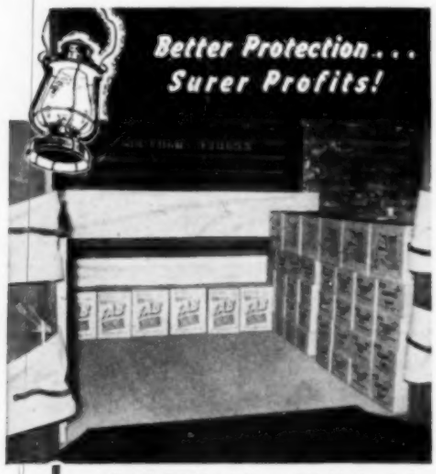
Tipped Nylon BRUSHES

UNTIL RECENTLY the performance characteristics of pure-bristle brushes had never been duplicated in those made of synthetic materials. Now, because of Robinson's careful expert tipping and blending of nylon filaments, *TIPPED* nylon brushes contain all the qualities of pure bristle brushes . . . flexibility, resilience, taper and good length out. Robinson *TIPPED* nylon brushes are superior in painting performance . . . they pick up more paint and lay it down faster, smoother.

An outstanding reception is given to Robinson's *TIPPED* nylon brushes by maintenance, production, and master painters alike. Try them yourself! They are available through Distributors, Paint and Oil Dealers or Hardware Stores. Catalog mailed on request.

EDWARD E. ROBINSON
INCORPORATED
P.O. Box 147
95 PARK AVENUE - NUTLEY 10, N. J.
Telephone NUtley 9-4510

If you write maker identify as IEN - 9767



Signode Retaining Strips are folded back out of the way during car loading, then brought together, tensioned and sealed from outside after loading. Retaining strips are inexpensive, easy to apply.

SIGNODE RETAINING STRIPS*
for freight car doorways

You don't make a dime in profits until your customers pay their bills. And they don't pay for products damaged at car doorways. That is why the manufacturer whose products are shown in the boxcar uses *Signode Retaining Strips.* They provide the quick, easy but *sure* way to stop doorway damage.

Signode Retaining Strips are used to protect full carloads of many commodities, including canned foods, packaged sugar, drugs, chemicals, cereals, insulation, fertilizers, cement, salt, lime, feed and seed.

For complete information about the use and application of Signode Retaining Strips, write today to

*TESTED AND APPROVED

SIGNODE
STEEL STRAPPING COMPANY
2611 N. Western Ave., Chicago 47, Ill.

SIGNODE

this means security in shipping
Offices Coast to Coast
In Canada: Canadian Steel Strapping Co., Ltd.
Foreign subsidiaries and distributors world wide.

If you write maker identify as IEN - 9769

INSULATING . . Air flow snubber protects gage against surge loading

Source: KING ENGINEERING CORP.
Box 530-A, Ann Arbor, Mich.

Remove screw to clean

Air or gas flow from a pressure source is limited to a slow rate and is prevented from building up sudden pressure in the event of a surge by installation of this new snubber in the flow line. Flow is restricted by a loosely fitted screw that threads into the brass body so the flow stream is forced to pass around the threads between the screw and the body to reach the outlet.

The screw is sealed by an O-ring under its head to complete the assembly. Overall length is about 2 inches. Connections are threaded for ¼-in. pipe. Flow rate is 0.04 cfm. at a pressure drop of 70 lb. per square inch. Maximum operating pressure is 1,000 pounds.

If you write maker identify as IEN - 9770

HOSE FITTING . . Union coupling with serrated shanks made of brass bar

Source: HOSE ACCESSORIES CO.
2700 N. 17th St., Philadelphia 32, Pa.

Shown in folder MLB-452

Series 900 Type BS are union type long shank hose couplings machined from solid brass bar stock. The units are non-porous, and available in a range of sizes from ¼-in. shank by ¼-in. pipe thread to ⅝-in. shank and ⅝-in. pipe thread. Intended service is in handling medium pressure steam and in spray applications.

If you write maker identify as IEN - 9771

SIGNALING . . Electronic speaker and recorder repeats recorded message

Source: MOHAWK BUSINESS MACHINE CO.
47 West St., 6th Floor, New York 6, N. Y.

Talks for you

Message Repeater is a new assembly of recorder and speaker to impress a desired message upon a tape and then to operate the tape to broadcast this message at intervals maximum at 5 minutes. The tape operates in a closed loop in connection with a motor drive to be started or stopped by any suitable device such as a switch, photo-electric cell, or other local remote control.

Messages can be erased and new ones recorded in a single operation. Connections are provided on the housing for external loud speakers to be positioned in several locations. The message can be one to direct action, to advise safety.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80

If you write maker identify as IEN - 9772

The Most Economical

Made of fewer parts, each part of specially selected steel, individually hardened for a specific purpose — they last longer.

CURTIS UNIVERSAL JOINTS

Not only do they give efficient service for a longer period of time but they are easier to install, quicker to assemble and disassemble. 14 standard sizes to choose from—with either solid or bored hubs. Facilities immediately available to produce specials to specifications.

ONLY CURTIS OFFERS ALL THESE ADVANTAGES

Availability — 14 sizes always in stock.
Simplicity — fewer parts, simpler construction.
Government Tests — complete equipment for government tests in our plant.

Write today for free engineering data and price list

CURTIS UNIVERSAL JOINT CO., INC.
7 Birnie Ave. Springfield, Mass.
As near to you as your telephone

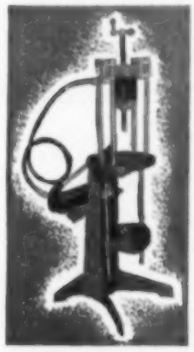
A MANUFACTURER OF UNIVERSAL JOINTS SINCE 1919

If you write maker identify as IEN - 9773

OTC 17½ TON HYDRAULIC OPEN THROAT PORTABLE PEDESTAL PRESS

ONLY $199.95

SAVES HOURS AND DOLLARS ON EVERY JOB



An unbelievable low price for this amazingly efficient Portable Pedestal Press and 17½ ton Power-Twin Hydraulic Puller . . . a must for every maintenance shop. Pays for itself on the first few jobs in time, tools and money saved.

Use it for pressing bearings, bushings, pins, for bending, straightening, compressing, spreading, etc. Move it where you want it—it's portable.

STRONG . . . will handle 95% of all pulling or installing jobs.

COMPACT . . . Base is only 20" x 21" — 34¼" from top of press plate to floor. Press Plate throat is 7½" deep, 6" wide, 10½" clearance between uprights, 11" from Ram to press plate with almost unlimited vertical adjustment. Weighs less than 200 lbs.

VERSATILE . . . POWER-TWIN Hydraulic Unit may easily and quickly be detached for field service or other pulling jobs.

INEXPENSIVE . . . dollar for dollar . . . ton for ton . . . the lowest priced, most rugged and efficient Hydraulic Press on the market.

See your jobber for complete information or write us.

OWATONNA TOOL CO.
371 CEDAR STREET • OWATONNA, MINNESOTA

If you write maker identify as IEN - 9774

BRADLEYS HELP MAKE THE PLANT..... A GOOD PLACE TO WORK

Adequate facilities for washing are now considered important by managements. Such facilities include sanitary Bradley Washfountains as pictured above.

Bradleys Save Water and Installation Cost

One hot and one cold water supply and one drain are the only connections required for a Bradley that serves up to 10 workers simultaneously.

There are no faucets to touch, the spray of water being supplied by the central sprayhead. Other advantages are explained in our Catalog 5204 . . . Why not write for a copy now . . . BRADLEY WASHFOUNTAIN CO., 2219 West Michigan St., Milwaukee 1, Wisconsin.

BRADLEY washfountains

Write for Illustrated Catalog 5204

Distributed Through Plumbing Wholesalers

If you write maker identify as IEN - 9775

CUT HANDLING COSTS...SPEED LOADING with Wayne LOADING DOCK LIFTS

TILT TO MEET LOAD . . . CUT LOADING TIME IN HALF

Loading dock lift is adjusted to correct height . . . industrial trucks in roll on and off easily. No chain lifts, any hard or costly manual labor necessary. Wayne Dock Lifts do it all . . . with valve or push button control of quick acting hydraulic system. Adjusts to any height.

From loading docks to production line, there's a Wayne industrial Lift. Wayne Lifts include ramps, sidewalk elevators, motorized lifts, cross over bridges, service lifts and others. Write for Wayne Industrial Lift booklet.

Wayne Sidewalk Lift

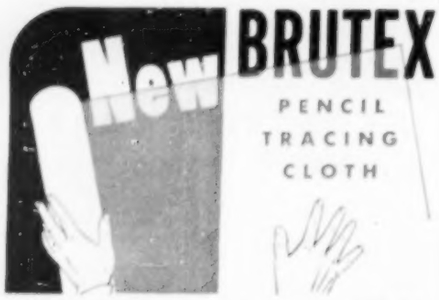
Wayne Cross-Over Bridge

THE WAYNE PUMP COMPANY
Salisbury, Maryland • Toronto, Canada

Wayne
NATION WIDE SERVICE

WAYNE LIFT DIVISION, Aranton, Ohio

If you write maker identify as IEN-9776



White... Moisture-Resistant!

This new, white Bruning pencil tracing cloth lets you draw better and faster than ever before, gives you an improved drawing surface with unsurpassed *permanent* translucency for top-notch reproductions.

Here are the six reasons Brutex does a better job: 1. The super-velvet matte surface is exactly *right* for pencils of even the harder grades. 2. Translucency is clear and uniform. 3. Repeated erasures do not affect the surface. 4. It's moisture-resistant. 5. Brutex won't discolor or become brittle. 6. All qualities are *permanent!*

Get free booklet from CHARLES BRUNING CO., INC., Department B62, Teterboro, N. J.

BRUNING
-Everything for the Engineer and Draftsman

If you write maker identify as IEN-9777

Clean plants get those important defense jobs. Get your plant cleaned up now. A week or month from now may be too late.

Send for important Doyle Vac-It information today. There's no obligation.

Model 114

Doyle VACUUM CLEANER CO.
7235 Stevens St., S. W. Grand Rapids 7, Mich.

If you write maker identify as IEN-9778

WHICH OF 1001 USES FOR THIS METAL HOSE IS YOURS?

Are you overlooking an opportunity to improve the performance, life, or salability of your equipment with metal hose?

Yours may be one of the hundreds of undiscovered uses for metal hose—especially for flexible, pressure-tight TITEFLEX® Metal Hose.

The special construction of Titeflex, and the variety of alloys, sizes, and fitted lengths enable you to combat severe temperature, pressure, and corrosion conditions where a flexible connection is necessary.

For maximum results, ask us for design suggestions and help in hose selection.

Titeflex Let Our Family of Products Help Yours

MAIL COUPON TODAY

TITEFLEX, INC.
506 Frelinghuysen Ave., Newark 5, N. J.

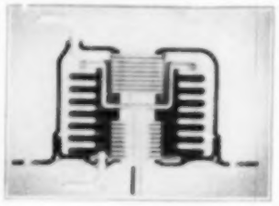
Please send me information about Titeflex Metal Hose and its applications.

NAME
TITLE
COMPANY
ADDRESS
CITY ZONE STATE

If you write maker identify as IEN-9779

BELLOWS . . Differential assembly maintains absolute pressure control

Source: CLIFFORD MFG. CO.
150-54 Grove St., Waltham 54, Mass.



Available to order

Large bellows made of metal is enclosed in a pressed steel housing. It is sealed at its inner ends by two small bellows. It mounts a bracket and operating shaft which extends through the center of one of the sealing bellows to project beyond the base. Pressure connections are completed to the inside and also to the outside of the main bellows.

These pressures act on the same effective bellows area so the resultant force produced by the difference between the inside and outside can be employed through the central shaft to actuate switches or valves or other controls.

Application includes operation of thermostatic or pressure switches that must operate under changing barometric conditions. Pressure drop across an orifice or venturi can be used to "sense" flow in a closed circuit.

If you write maker identify as IEN-9780

REFRIGERATING . . Sub-zero machine particularly for part, instrument tests

Source: DEEPFREEZE DISTRIBUTING CORP.
3932 Reading Road, Cincinnati 29, Ohio

To simulate service

Sub-Zero Model R-70 is a new assembly in the company's line of sub-zero equipment, previously described IEN-5480-52. The new unit provides a chilling chamber that measures 30 by 18 by 33 in. to take parts or instruments for test of their ability to withstand the effect of extreme cold.

Thermal capacity is 8800 btu. per hour at minus 70 deg. F. with temperature control adjustable from minus 10 to minus 80 deg. F. Overall dimensions are 48 by 43 by 47 inches. Operation is on 220-volt three-phase 60-cycle ac. to the 1-hp. refrigerating equipment motor. Insulation is 4 in. of Santocel.

Identify as IEN-9781

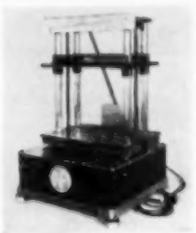
Pocket size card has been printed by E. Reed Burns, manufacturer of polishing and buffing compounds, to make an on-the-job analysis of compound performance. The company offers a supply of the cards along with a sample of the compound for test application. It asks that you name the material you are polishing or buffing, the diameter, spindle speed and type of wheel you are using, the finish desired.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-9782

A PAID NEWS ADVERTISEMENT BY FISHER SCIENTIFIC CO.

COMPRESSION & FLEXURE TEST UNIT handles wide range of materials



"Flat Crush" and "column compression" tests of paper and corrugated board can be quickly handled by a new instrument offered by Fisher Scientific Company. The unit also handles compression tests of cases, drums, cartons and containers in conformance with standards of the Technical Association of the Pulp and Paper Industry. It can be used in general compression testing of springs; and makes flexure of tests of plastics, glass, ceramics, insulation board, plywood, asbestos-cement shingles, and carbon-brush materials. Tests are made by placing material between two platens, manipulating two simple controls, and reading a large linear load scale. The upper platen supplies the compression force. It rides four rigid upright posts; is driven downward by motor-powered screws; can be set to travel at any desired speed up to 2½ inches a minute. The lower platen activates the weighing mechanism. Small and compact (24" x 20" x 30" high), the unit handles specimens up to 12" x 12" x 16" high through a range of 0 to 1,880 pounds.

For further information on the new Multi-Purpose Compressions Tester, write **Fisher Scientific Co.**, 717 Forbes St., Pittsburgh 19, Pa.

If you write maker identify as IEN-9783

The delicately honed edges of fine razor blades are often protected by a band of Riegel Paper . . . a paper that's quite out of the ordinary because it combines strength and easy formability with special anti-tarnish properties. It is carefully processed to eliminate all traces of the corrosive salts and the sulphur found in ordinary papers.

This is just one of bundreds of interesting examples of Riegel's ability to make paper for almost any need. We now produce more than 600 grades . . . many with properties that would surprise you. Next time you find a little piece of stiff tan paper around a new razor blade, let your imagination wander. What can a special paper do for you? Write to Riegel.

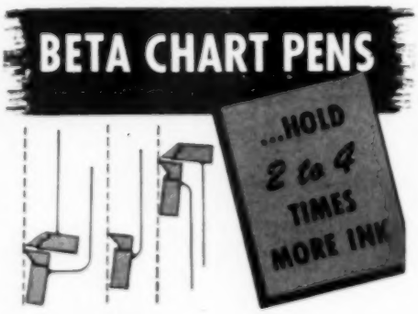
RIEGEL PAPER CORPORATION
P. O. Box 170 · Grand Central Station · New York 17, N. Y.

Riegel

• TAILOR-MADE PAPERS FOR INDUSTRIAL USE •

If you write maker identify as IEN-9784

If you write maker identify as IEN-9785



Beta Fountain Pens hold two to four times the ink of ordinary chart inking pens. Regardless of the line thickness Beta Pens produce a smooth unbroken and uniform line. Pens shown are approximately actual size and can be arranged to reduce time interval between static and differential lines to only a few minutes. Beta Pens are especially suitable for seven day records. Price $1.18 (lower prices in quantities).

Send for bulletin No. 110.

AMERICAN RECORDING CHART CO.
3013 E. 11th St. • Los Angeles 23, Calif.

Available for Early Delivery

If you write maker identify as IEN - 9786

SPARE PARTS BOXES

MADE TO JAN-B-233

JOINT ARMY-NAVY SPECIFICATIONS

With or without internal framing partitions

Type "M" (Metal)

Fabricated and finished in strict compliance with Government specifications. Made in all nominal and special sizes.

WRITE, WIRE OR PHONE FOR PRICES ON YOUR SPECIFIC REQUIREMENTS

COLUMBIA METAL BOX CO.

250 E. 143rd St., New York 51, N. Y.

If you write maker identify as IEN - 9787

when the **Chips are Down-**

take 'em OUT with a **HOUDAILLE CONVEYOR**

Licensed under Hapman's Patents No. 2,147,199 and 2,432,756

All Honan-Crane equipment is sold on a performance guaranteed basis.

In this large motor car plant, Houdaille Enclosed-Flight Conveyor continuously removes chips from pit beneath twin banks of Ransoh 12-Station Transfer Drilling Machine. Chips are deposited into portable hopper for disposal. Houdaille Conveyor is ideal for removing small material from confined area. This installation paid for itself out of savings in one year.

Automatic System Solves Difficult Chip and Sludge Removal Problems . . . Cuts Costs, Speeds Production

Houdaille Conveyor's automatic loading and continuous materials transport handles any solid or fibrous waste (chips, abrasive sludge, scale, etc.) which settles to the bottom of a tank or hopper. Many plants of all sizes, in many types of operation, have saved substantially on labor, maintenance, down-time and other production costs by installing one or more Houdaille Conveyor systems.

Check these important Houdaille advantages:

- Eliminates costly manual cleaning and handling methods
- Operates continuously or intermittently as needed without shutting down productive machinery
- Readily adaptable to almost any need, any space or traverse requirement . . . ideal for restricted areas
- Dependable, trouble-free automatic operation; requires little or no maintenance attention; quickly pays for itself out of savings.

Write for complete information and case histories. Honan-Crane Engineering Service is available.

HONAN-CRANE CORPORATION

802 Wabash Avenue, Lebanon, Indiana

Subsidiary of **HOUDAILLE-HERSHEY CORP.**

WORLD'S LEADING OIL FILTER MANUFACTURER

IN CANADA:
E. W. Playford, Ltd., Montreal 28
W. E. Micklethwaite, Toronto 18
Cummins Gallbraith, Ltd., Edmonton, Alta.

If you write maker identify as IEN - 9789

PRESS . . Motor driven machine, removable bed and work holding horn

Source: KENCO MFG. CO.
5209-13 Telegraph Road, Los Angeles 22, Calif.

Mounts on bench or legs

New design in the company's 4 and 5-ton punch presses, previously described IEN-3288-41, includes an adjustable ram clamp with a square hole that will grip any tool shank measuring 1 to 1⅞ in. in diameter. As in the previous design the press provides a 12¾-in. throat and operates at variable speed between 90 and 280 strokes per minute. The clutch is provided with a shear pin that releases in the event of excessive overload. A non-repeat safety mechanism is included.

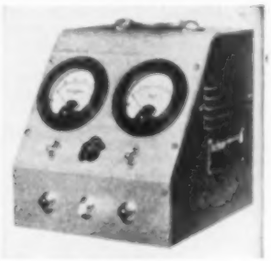
The bed can be set up in either of two positions on the frame for standard or long die space. The bed can be removed and a horn put in its place as shown in the illustration. The horn can be removed and the press employed with other work supporting equipment supplied by the user.

Stroke is standard at 1 or 1¼ in. with a longer stroke to a maximum of 3 in. when specified. Bed area measures 7 by 10 in. or 10¼ by 10 in. in two available sizes of both the 4-ton and the 5-ton machine. Die space is 6⅛ in. for the smaller bed, 7¼ to 10¼ in. for the larger. Height of both is 28 inches.

If you write maker identify as IEN - 9790

CONTROL . . Maintains level of cold boiling liquid in a flask

Source: HOFMAN LABORATORIES
210-14 Wright St., Dept. B, Newark 5, N. J.



For laboratory use

Model A for time rate control with one sensitive liquid level element and Model B for two point control are new instruments for laboratory use to maintain a predetermined liquid level of cold boiling liquids. Model A is shown in the illustration. It employs a timer to control a minimum level and differs from Model B in that the latter replaces the timer with the second level control element.

Both models operate solenoid valves in the supply lines to their flasks and both are equipped with pilots and meters to indicate operation. Input is on 110 volt 60 cycle ac., or on dc. when specified. Model A measures 8 by 8 by 8 inches and weighs 8 pounds. Model B is 8 by 8 by 14 in. weighs 13 pounds.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9791

STEAM

FOR HEAT OR PROCESS

A complete steam plant backed by undivided responsibility • Shipped completely assembled • More than 80% thermal efficiency guaranteed • 4-pass design provides 5 sq. ft. of heating surface per b.h.p. • Built-in induced draft eliminates need of expensive chimney • Simple installation • Clean, quiet operation • Heavy-duty construction assures long-lived dependability.

Superior Steam Generators are manufactured in 18 sizes from 20 to 600 b.h.p. for pressures up to 250 p.s.i. or for hot water heating.

For complete details, write for Catalog 317

SUPERIOR COMBUSTION INDUSTRIES, Inc.
Factory: Emmaus, Pa.
Sales Offices: Times Bldg., Times Sq., New York N. Y.

SUPERIOR STEAM GENERATORS

If you write maker identify as IEN - 9792

Type "B" Pressure Reducing and Regulating Valve

There's a CASH-ACME Automatic Valve to handle anything that flows—Water, Air, Steam, Gases, Chemicals, Refrigerants, Oil, Gasoline and all other types of liquids.

Steam Equipment Manufacturers Specify CASH-ACME!

In any industry that requires consistent pressure control, CASH-ACME is specified by more and more manufacturers. Write today and find out how a CASH-ACME Automatic Valve can help with the successful operation of your product.

CASH ACME SILENT SENTINEL Automatic Valves

A. W. CASH VALVE MANUFACTURING CORP.
6612 E. Wabash Avenue
Decatur, Illinois

If you write maker identify as IEN - 9793

MOVE MATERIALS faster with fewer workers

An excellent way to cope with the dwindling labor supply is to use conveyors to aid workers in moving materials. All man hours thus saved can then be used on productive operations. You have available a complete line of MHS Pre-engineered Conveyors for handling packages, parts between manufacturing processes, progressive assembly, inspection, order make-up and into or out of storage.

All component conveyor parts are simplified and standardized—mass produced for maximum manufacturing economy. They are capable of an unlimited number of combinations to meet any specific set of requirements. Thus you may have the advantages of a custom-built conveyor without the engineering expense or without any delay for designing.

Write for Bulletin PE 1 on MHS Pre-engineered Conveyors

Mechanical Handling Systems Inc. MHS

4605 NANCY AVE. • DETROIT 12, MICH.

Offices in Principal Cities

If you write maker identify as IEN - 9794

R.C.S. SUPER SAW

AIR COOLED

Saves you more time than any other tool in your kit

A Journeyman's tool, built to stand up under constant, on-the-job Contractor or Industrial use.

Built-in Blower—Anti-friction replaceable bearings—No starting hole needed—Blades to cut all materials—Fits any heavy duty ¼" or ½" drill.

Super Saws and Blades are listed on Federal Supply Schedules, Class 40 Material.

Write for Bulletin H-9 and prices

R.C.S. TOOL SALES CORPORATION

JOLIET, ILLINOIS, U.S.A.

If you write maker identify as IEN - 9795

RATE: 440 TUBES PER HOUR
COST: 1/10c PER JOINT

When you can do it so fast and cheap, why braze the slow ways? Tubes are heated in fixture—four at a time. Transfer switch arrangement permits loading one fixture while other four tubes are being brazed, so that duty cycle of almost 100 percent is maintained. Reject rate is low; scaling is minimized; cost is low.

Whether your problem is brazing or soldering, hardening or annealing, see what A-C Induction Heaters can do for your costs. Call your nearby Allis-Chalmers district office, or write Allis-Chalmers, Milwaukee 1, Wisconsin.

A 1771

ALLIS-CHALMERS

If you write maker identify as IEN - 9796

No Miracle, Just *Sound Engineering*

Noise reduced 50%* inside a

BURGESS-MANNING

Acousti-Booth

In the hushed interior of this roomy, airy Acousti-Booth you hear easily while telephoning. Walls of thick sound-absorbing material and patented construction reduce the loudness of noise by 50%.

Pleasing in appearance . . . simple to install.

Write for Bulletin A-101

* Results of studies by a prominent research group

BURGESS-MANNING COMPANY

Architectural Products Division

3970-A Northwest Highway, Chicago 31, Illinois

If you write maker identify as IEN - 9797

INCREASES TAP LIFE

by Guided Accuracy

Quickly pays for itself on small-lot tapping operations. Insures accurately tapped holes, increases work output, practically eliminates tap breakage and removal. Has slotted base for fixtures. Special steel machined parts. Long spindle bearing provides accurate alignment and long life. Four hardened collets, furnished, handles standard tap shank sizes from No. 0 through ¼". Either right or left hand taps may be used. Finished in machine tool gray. Write for circular.

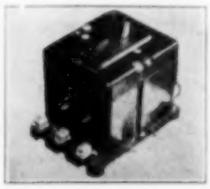
$20.50 POSTPAID

H. D. HERDER TOOL SPECIALTIES
3724 E. MICHIGAN AVE.
KALAMAZOO, MICH.

If you write maker identify as IEN - 9798

CIRCUIT BREAKER . . Plug in design, rates 10 to 50 amp., 125 volt ac., dc.

Source: TRUMBULL ELECTRIC
39-43 Woodford Ave., Dept. M-1, Plainville, Conn.



Ask for Bulletin TEE-6

Type K-173 is a new circuit breaker initially designed for Navy use. It is characterized by its plug-in connection between the breaker mechanism housing and the sub-base. The base carries copper studs that face upward to engage female draw-out terminals. The two parts are disconnected after removing the holding screws at the sides, threading them into inserts molded into the cover and pulling straight out on them. The arrangement permits removal of one breaker and replacement of another to minimize time out for repair. The connections are designed so it is not possible to place the breaker incorrectly.

Application is for three-wire lighting circuits but the breaker can be used for two-wire circuits by connection to the two protected poles. It is suited for overload and short circuit protection of load circuits supplying power to single units such as radar, ordnance, electronic equipment. Interrupting rating is 5,000 amperes. Trip takes place magnetically on line currents greater than 1,200 amperes. The action is trip free. The circuit cannot be reset until a fault has been corrected. The housing measures 4½ by 3⅝ by 3½ inches.

If you write maker identify as IEN - 9799

DRAFTING . . Illuminated table mounts round glass top for tracing

Source: STACOR EQUIPMENT CO.
471-5 Troy Ave., Brooklyn 3, N. Y.

Old prints will show

Fluorescent lamps equipped with reflectors are mounted beneath a ground glass top in this new drafting table. The glass is ground on its underface to diffuse the illumination. It is smooth on the top surface. Two table sizes provide tracing surfaces that measure 20 by 25 in. and 24 by 36 inches. They are equipped with two 20 watt and two 30 watt fluorescent lamps respectively. The lamps operate without heating.

The table top is adjustable between horizontal and a forward tilted position as shown in the illustration. Construction is maximum at 90 lb. per inch of width.

Identify as IEN - 9800

Several doors open from a central office area to main aisles that carry truck traffic at the new IBM plant in Poughkeepsie, N. Y. This could have represented a safety hazard if the architects had not recognized and cancelled the hazard with some little door switches. These units; of the type made by Bryant Electric, close a light signal circuit the moment the door is "cracked" to tell a truck driver that it is coming open.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9801

A PAID NEWS ADVERTISEMENT BY SUPERIOR TUBE COMPANY

SPECIAL FINISH OF CARBON STEEL TUBE SOLVES MANUFACTURING PROBLEM

SMOOTH surface, free from pits and scratches, plus rigidity, were prime requirements of a manufacturer of telescopic sights for sporting and target rifles. Like most Superior customers they got exactly what they sought without the need for specifying "premium" tubing. Superior experience backed by highly developed production equipment and extensive research and testing facilities helped solve this production problem.

YOU, TOO, may have a problem involving the use or application of fine small tubing. Superior can help you find the solution. Check your needs against our production of tubing in all analyses from .010" to ⅝" O.D. and in certain analyses (.035" max. wall) up to 1⅜" O.D. For information write today.

SUPERIOR TUBE COMPANY
2016 Germantown Avenue
Norristown, Pennsylvania

If you write maker identify as IEN - 9802

free help! for product designers!

Illustrated booklet tells how MASONITE PRESDWOOD helps make better products

Could be just what you're looking for! Full of ideas to help you shape up new products, improve old ones. Masonite Presdwood;* those tough, grainless, all-wood hardboard panels, are so very versatile that designers and manufacturers are still discovering new ways to use them. You'll find them better—28 ways! Come in 39 types and thicknesses. Write today for "A Guide for Product Designers." It's yours—free!

BETTER HARDBOARDS FOR BETTER PRODUCTS

MASONITE® CORPORATION
DEPT. IEN-9, BOX 777
CHICAGO 90, ILL.

"Masonite" signifies that Masonite Corporation is the source of the product

If you write maker identify as IEN - 9803

Volume-manufactured in two styles—the socket type and the Crowfoot type, TAC Open End Ratchet Wrenches are scoring phenomenal time and labor savings throughout all Industry.

It is a matter of record that heretofore no tool was made that could *—in a limit of 7° ratcheting arc—* successfully tighten or back off nuts or fittings on tubing or other standing center assemblies. The speed with which TAC can complete difficult wrenching jobs, in anybody's hands, is amazing.

Our plants are currently producing at capacity for all the Armed Forces and for Defense industries.

For Phenomenal Speed in These Wrenching Jobs

ELECTRICAL CONDUIT
HYDRAULIC LINES
LUBRICATION LINES
ENGINE FUEL LINES
PNEUMATIC LINES
REFRIGERATION
AIRCRAFT
RAILROAD EQUIPMENT
RIGGING EQUIPMENT
REFINERY EQUIPMENT
CHEMICAL LINES
AUTOMOTIVE EQUIPMENT
WATER AND GAS LINES
. . . AND DOZENS OF OTHERS

© 1952—TAC

TUBING APPLIANCE COMPANY
10331 ANZA AVENUE
Los Angeles, California

For information about TAC Wrenches see your INDUSTRIAL SUPPLY DISTRIBUTOR

If you write maker identify as IEN - 9805

Immediate delivery military controls

Includes
JAN-R-94
JAN-R-19
types of military variable resistors and non-JAN controls

UNPRECEDENTED PERFORMANCE CHARACTERISTICS
Designed for use in military equipment subject to extreme temperature and humidity ranges, many of these controls are widely used in:

JET AND OTHER PLANES
GUIDED MISSILES
TANKS
SHIPS AND SUBMARINES
TELEMETERING
MICROWAVE
PORTABLE OR MOBILE EQUIPMENT
ALL OTHER MILITARY COMMUNICATIONS

167 types

Immediate delivery from stock on all 167 types. For complete list, description, photos and performance characteristics:
WRITE TODAY FOR STOCK SHEET NO. 162

FOUNDED 1896 • CTS • ELKHART, INDIANA

CHICAGO TELEPHONE SUPPLY Corporation

specialists in precision mass production of variable resistors

If you write maker identify as IEN - 9806

Custom Protection

prevents shipping damage
as no other packaging method known!

The Gray Manufacturing Company's efficient handling of their Audograph package is typical of the outstanding results obtained by leading manufacturers everywhere who now use Kimberly-Clark INTERIOR PACKAGING—KIMPAK*. In most cases this change to *custom protection* brought about faster, more streamlined packaging operations—and an end to product damage in shipment.

KIMPAK, available in rolls, sheets or pads, is soft, grit-free and easy to apply as wrapping paper. It will absorb up to 16 times its own weight in moisture within 30 seconds—protect against shock, scratching, pressmarking and vibration. Whether you package furniture, flowers or appliances—pharmaceuticals, confections or electrical parts—KIMPAK can be "tailored" to fit your particular needs, especially in finish protection. Furthermore, KIMPAK keeps your package clean and attractive—eliminates the disorder common with loose-fill substitutes.

Today—investigate *custom protection* with KIMPAK. For information, write Dept. P-9, Kimberly-Clark Corporation, Neenah, Wis.

KIMPAK INTERIOR PACKAGING — A Product of Kimberly-Clark

*T. M. 1952 U. S. & FOREIGN COUNTRIES

If you write maker identify as IEN - 9808

TRUCK . . Roll clamp attachment picks up, rotates cylindrical loads

Source: BAKER-RAULANG CO.
1248-52 W. 80th St., Cleveland 2, Ohio

Centered for the operator

New attachment applies on any of the company's fork lift trucks rating ½ to 2 ton. It permits the operator to pick up, transport and stack paper rolls, drums, large pipe measuring from 1½ to 3 ft. in diameter. The attachment rotates by hydraulic pressure through 90 deg. in a vertical plane. Clamping pressure is controlled by a valve.

Application is on the company's Four-Purpose carriage which combines ability to space forks, to side shift, to clamp and to operate standard forks. Two men can detach the new unit by removing retaining pins at the base of the carriage, detaching two push-pull Hansen couplings in the hydraulic lines. This releases the clamp to lift it out of position. A set of forks can then be put in its place and locked by the retaining pins to handle pallet loads.

If you write maker identify as IEN - 9809

CLEANING . . Granular compound for steel to be extruded, deep drawn

Source: DETREX CORP.
14329 Woodrow Wilson, Detroit 32, Mich.

Particularly for pre-cleaning

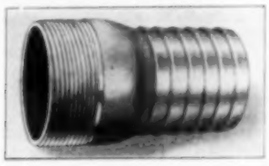
Detrex 61 is a new free flowing, non-dusting, dry granular material that is shipped in 500-lb. non-returnable steel drums and in 140-lb. kegs. It is used in a soap tank. Operating temperature is recommended at about 190 deg. F. with concentration from 6 to 10 oz. of the compound per gallon of water.

Steel parts immersed in the solution come out free from oil, grease and dirt. The solution has excellent wetting and penetrating ability and is free rinsing. It does not contain fatty acids or resin soaps that can leave scummy surface deposits.

If you write maker identify as IEN - 9810

HOSE FITTING . . Combination nipple made of steel, scale free inside

Source: HOSE ACCESSORIES CO.
2700 17th St., Philadelphia 32, Pa.



Series 650-SC is a new combination nipple made of steel tube in sizes from 1 to 6 in. to connect a hose and a pipe of the same size. The nipple is formed, threaded and machined to present serrated rings that will grip the hose and threads for the pipe.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9811

STANDOUT IDENTIFICATION
- at the right price!

METAL NAME PLATES by

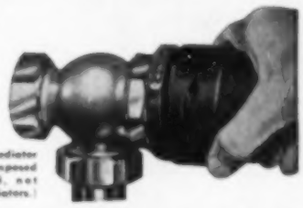
CHICAGO THRIFT-ETCHING CORPORATION

Spotlight your product with a sparkling metal name plate that reflects quality, lends distinction and assures permanent readability. Ask us to quote on name and instruction plates, dials, panels, etc. We also apply special finishes to aluminum products and parts including ANODIZING by the exclusive Alumilite process. Write today for information and quotations.

CHICAGO THRIFT-ETCHING CORPORATION
1555 North Sheffield Ave., Chicago 33, Illinois, Dept. F
SUBSIDIARY OF DODGE MFG. CORPORATION, MISHAWAKA, IND.

If you write maker identify as IEN - 9812

Simplified System for low-cost room comfort



Sylphon Automatic Radiator Valve No. 885, for exposed radiators. (No. 895, not shown, for enclosed radiators.)

SYLPHON Automatic Radiator Valves

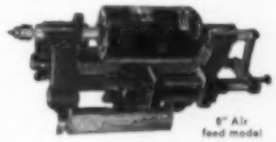
● Never too much or too little heat with these dependable Sylphon Automatic Radiator Valves on the job. They keep temperature as wanted. Assure uniform temperature control in one room, an office or entire building. Improve occupant efficiency. Easily installed on your present radiators. Simply constructed, self-powered, self-contained, fully modulating. Cost less than any other automatic controlling system available. Pay for themselves in fuel savings. Write for Bulletin RN-80.

FULTON SYLPHON DIVISION
ROBERTSHAW-FULTON CONTROLS CO. • • KNOXVILLE 4, TENN.
Temperature Controls • Bellows Devices • Bellows Assemblies
Canadian Representative, Darling Brothers, Montreal

If you write maker identify as IEN - 9813

Precision Hi-Speed Drilling in Metal, Wood, Plastic or Composition—.004"-.156"

Check These 9 Features



8" Air feed model

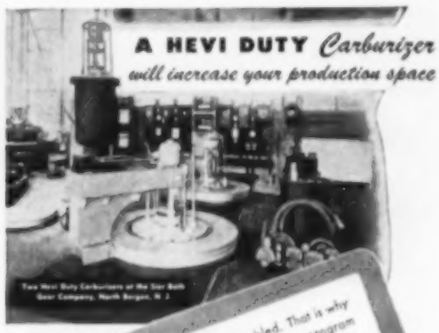
- Fingertip variable speed
- Fast approach air feed
- Hydraulic feed control
- Electric or manual controls
- Deep hole drill cleaning
- Sensitive Precision spindle
- 1000-10,000, 2500-15,000 RPM
- Can be mounted at any angle, with hand or power feed
- Price 8" model, hand feed, from $130.00. Air feed model (as shown) from $238.50.

Write for helpful bulletin.

The ELECTRO-MECHANO CO.
267 E. ERIE ST. MILWAUKEE 2, WISCONSIN

If you write maker identify as IEN - 9814

A HEVI DUTY *Carburizer* *will increase your production space*



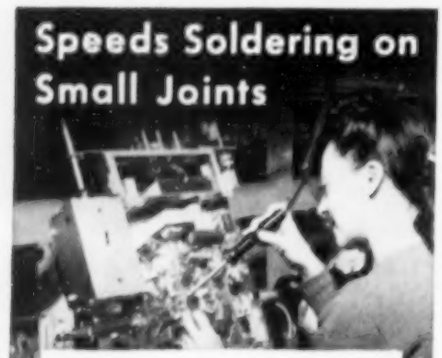
Two Hevi Duty Carburizers at the Sur Bolt Gear Company, North Bergen, N. J.

The cost of new plant space has doubled. That is why the Hevi Duty Carburizer should fit into your program of expansion of production heat treating facilities. It is economical—turning out tons of work in a minimum floor space. Flexible—since the same type of furnace can be used for most of the major heat treating operations such as Carburizing, Nitriding, Bright Annealing and Clean Hardening. Information which will interest you is in Bulletin HD-646—send for it—today.

HEVI DUTY ELECTRIC COMPANY
HEAT TREATING FURNACES HEVI-DUTY ELECTRIC EXCLUSIVELY
DRY TYPE TRANSFORMERS — CONSTANT CURRENT REGULATORS
MILWAUKEE 1, WISCONSIN

If you write maker identify as IEN - 9815

Speeds Soldering on Small Joints



New, lightweight iron offers these features for production-line soldering in electronic and communication industries:

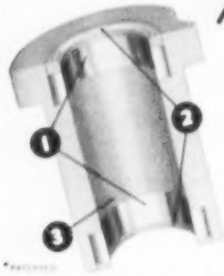
- Thin shank gets tip into places a regular iron can't reach
- Lighter weight iron lowers operator fatigue
- Ironclad tip needs little maintenance

FREE BULLETIN gives you complete information. Write for GEI-1501 to Sect. 720-05, *General Electric Co., Schenectady 5, N. Y.*

GENERAL ELECTRIC

If you write maker identify as IEN - 9816

MORE HOLES— MORE ACCURACY— FASTER— AT LESS COST



MEYCO

Carbide Inserted Bushings Are Doing It Daily!

HOW? Like this: (1) Last longer . . . with a life—in most cases—as long as solid carbide bushings at prices that come close to the prices of ordinary steel bushings. (2) Increased life for your drill jigs and fixtures. (3) Increased life for your drills and reamers. (4) Accuracy maintained for a LONG PERIOD of time. (5) Less non-productive machine time, less lost man-hours, because bushings need not be changed as often. (6) Inspection time saved, because of greater accuracy for a longer time, and (7) Less waste due to spoilage, for the same reason. Don't pass up a good bet! Get the dope on Meyco Carbide Inserted Drill Jig Bushings today!

1. Tungsten carbide rings at the points of wear. 2. Steel rings protect softer shell portions. 3. Special hardened alloy steel body.

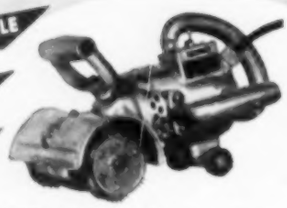
For information and prices write for Meyco Bushing Catalog No. 16.

W. F. MEYERS CO., INC., BEDFORD, INDIANA

If you write maker identify as IEN - 9817

ZIP OFF

SCALE
RUST
PAINT
with



AURAND CLEANING TOOLS

AURAND rotary chipping action quickly, easily, thoroughly removes scale, paint, rust and other accumulation from any hard surface. Renewable cutter heads and foul-proof cutting depth adjustment allow the unskilled operator to produce perfectly clean surfaces. Available in electric or pneumatic models. Write today for further information on cleaning your iron, steel, brick, concrete, and other hard surfaces.

Get the time and money-saving facts

GET THE TIME AND MONEY-SAVING FACTS. WRITE TODAY TO DEPT. 649

AURAND MFG. & EQUIP. CO.
2643 Colerain Avenue • CINCINNATI, OHIO

If you write maker identify as IEN - 9818

PACKAGING . . Heat sealing machine for plastic bags, 8 to 15 inch width

Source: PACK-RITE MACHINES
405-9 E. Michigan St., Milwaukee 1, Wis.

Bars treated against sticking

Aluminum castings form the base and upper movable jaw frame on this new Poly-Jaw machine in the company's line of heat sealing equipment. The two are hinged together on Oilite bronze bushings and are equipped with brass sealing bars. The upper jaw carries an electrically heated bar in which the heat is supplied by a brass sheathed cylindrical element. Temperature is controlled in an adjustable range to 550 deg. F. by a thermostat. An indicator shows the set point.

Sealing bars are available in 8, 10, 12 and 15 in. lengths which determine the width of the bag that can be sealed. The shipping weight of the machine with an 8 in. bar is about 13 lb., not counting the angle support shown in the illustration. This particular unit is available as extra equipment when specified. It positions the machine at a 32-deg. angle with horizontal. Application is on a bench with a foot pedal connecting to the upper spring supported head.

If you write maker identify as IEN - 9819

HEATING . . Oil fired space unit in portable assembly for open areas

Source: AUBURN BURNER CO.
1940 McIntyre St., Auburn, Ind.

Heat issues at bottom

Oil burner using No. 2 fuel oil from a supply carried in a tank at one end of this new Model PH heater fires directly into a combustion chamber inside the housing. Products of combustion issue from the rear of the chamber through two tubes coming out to each side of the motor driven blower that draws in and delivers air to be heated. Both issue together.

Rating is 105,000 btu. per hour. Blower capacity is 1,200 cfm. Oil consumption is 0.75 gph. The supply tank holds 7 gallons. The unit is ready for operation upon connection to a 110 volt 60 cycle power line. Overall dimensions are 53 by 20 by 45 inches.

Identify as IEN - 9820

Tougher than wood, more porous, non-splitting, uniform structure, ability to withstand heat and overcharging, all characterize a new U. S. Rubber plastic battery separator. It has excellent capillary action. Cost is a little more than the wood unit and about one-half that of rubber.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9821

ECONOMIZE with Morton

FIXTURE CLAMPS and COMPONENTS

NATIONALLY USED AS STANDARDS

When confronted with a problem considered impossible by the experts, Mr. Andrew C. Dickson, General Superintendent of Mfg., Detroit Tank Arsenal, and Staff, together with the "Know-How" of Colonial Broach Engineering Staff solved it, resulting in a $400 a day saving.

Write for Catalog of most complete line in the industry. Full size tracing, inquiries of stock product. Economize with MORTON.

MORTON MACHINE WORKS
2421 WOLCOTT ST. DETROIT 20, MICH.

If you write maker identify as IEN - 9822

SAFETY FILE HANDLES by Remoort

give lasting safety and surfacing clearance with no handle interference, making them ideal for die-makers—under and over handle gives complete visibility for lathe work. Files are securely held in a steel, dove-tailed V block . . . . just drive it on—knock it off to remove. Light in weight, wooden handle, absorbs moisture and oil, assuring a firm grip. Designed for lasting performance. Sizes 6" to 16", for all Mill, Flat and Half-round files. Prices as shown.

PRODUCED TO A STANDARD OF QUALITY—NOT PRICE

OVER-TANG
Vertical Handle for Surfacing

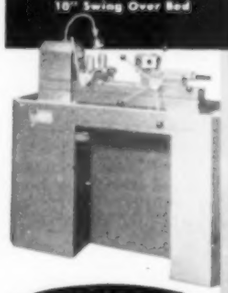
For 12" to 16" Files
Sizes as Above Weight 6 Ounces

Write today to

Remoort MANUFACTURING CO.
1310 Meyers Road, Lombard, Illinois

If you write maker identify as IEN - 9823

THE NEW GLOBE HAND-SCREW MACHINE
10" Swing Over Bed



power for big cuts
accuracy for second operation work

Here's the hand-screw machine that combines the features of a production and a precision lathe!

EXTRA WEIGHT in bed, headstock and accessories insure close tolerance work; rigidity for heavy loads and chatter-free operation.

BIG 1-7/16" SPINDLE HOLE takes oversize work diameters. Chucks 1" bar stock in draw collets or 1⅜" work in nose collets!

HIGH SPEED BEARINGS: Tapered rollers insure spindle rigidity, high speeds, easy take-up.

INSTANT SPEED CHANGES with gear selector.

16 SPINDLE SPEEDS—from 154 to 1796 rpm.

POWER—1 full horsepower, 2 speed motor, twin Vee belts to spindle.

LOW COST—priced in the economy range.

ASK FOR DETAILS!

GLOBE HEAT-SEAL, INC.
MACHINE TOOL DIVISION
3376 S. Robertson Blvd., Los Angeles 34, Calif.

If you write maker identify as IEN - 9824

NO OTHER Electric HAND SAW Does . . . So Much So Fast . . . So Well

LESTO

SAWS

- 2" Hard or Soft Wood
- Curves of All Types
- Insertions
- Plastics

Designed, Manufactured and Patented by Scintilla, Ltd., Switzerland, since 1944.

Write for Literature
Sold & Serviced in Principal Cities Throughout U.S.A.

VICTOR J. KRIEG, Inc.
Sole U.S. Representative for Scintilla, Ltd. Switzerland
31 West 32nd St., New York 19, N. Y.
ELdorado 5-4030
Some Sales Territories Available

If you write maker identify as IEN - 9825

"M-B" AUTOMATIC Air Line FILTER, REGULATOR and LUBRICATOR ASSEMBLY

"Sentinel of the Air Line"

Also Pneumatic Grinders

"Remember, Built-in quality remains long after first-cost disappears"

FILTER element removes solids .00039 and larger. TRANSPARENT BOWL provides visibility. REGULATOR is capable of passing large volume with an unrestricted flow and minimum amount of pressure drop. Self-bleeding, compact, simple. Machined from bar aluminum. LUBRICATOR delivers desired volume of oil. Adjustable Venturi Valve permits efficient operation on broad range of volume and pressure. Bowl can be refilled without shutting off air supply. Any of these 3 devices can be used as separate units or in any combination.

Write for Literature

M-B PRODUCTS
46 Victor Avenue
DETROIT 3, MICHIGAN

If you write maker identify as IEN - 9826

Pangborn "EZ" Hydro-Finish paid for itself in three months at Benedict-Miller, Newark, New Jersey.

Checking with micrometer proves Hydro-Finish can hold tolerances as close as .0001".

"EZ" DOES IT!*

*At Benedict-Miller, PANGBORN "EZ" Hydro-Finish® Cabinet

- Saves Labor!
- Gives Better Surfaces!
- Increases Business!
- Saves Money!

"EZ does it," says Robert M. Bloss, General Manager at Benedict-Miller of Newark, N.J. "In fact, our EZ Hydro-Finish does a lot more than we ever figured it could!"

Take one case in particular—cleaning the inside surfaces of doll head molds. From a required hand cleaning time of three hours per mold, Hydro-Finish stepped up production to 80 in five hours—a labor saving of well over $200 on this job alone!

Heat treat scale was previously removed by pickling. But after trying Hydro-Finish, the report was: "Besides all the extra costs and trouble, an acid pickling surface just can't compare with a Hydro-Finish surface." On some items, Benedict-Miller's heat treat business was actually *doubled*, as customers learned about the amazing finish B-M (and EZ) turned out!

It all adds up to better quality, faster production, and increased profits for Benedict-Miller and its customers. Learn how Pangborn can do this for you, too. Write today for Bulletin 1400-A. Address: PANGBORN CORP., 2300 Pangborn Blvd., Hagerstown, Maryland.

Pangborn

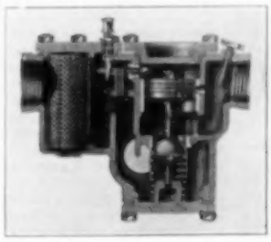
Look to Pangborn for the latest developments in Blast Cleaning and Dust Control equipment

BLAST CLEANS CHEAPER with the right equipment for every job

If you write maker identify as IEN - 9828

TRAP . . Removes air and water from steam line, pressure to 650 pounds

Source: VELAN ENGINEERING CO.
3 Exchange Place, Jersey City 2, N. J.



Piston controls main valve

Air and water enter this new trap at the left hand side to pass through a strainer when a valve to the trap is first opened in a steam line. The water moves down to accumulate in the base of the trap. The air passes through a pilot orifice into the cylinder above the main valve orifice. This air, at line pressure, forces the piston downward to open the main 2-in. orifice against combined line and spring pressure beneath the valve.

Air and water will be blown out of the trap through the outlet to the right until steam reaches the trap. Then the bi-metal element controlling the pilot orifice will close it off and pressure above the piston will be relieved through the opening drilled in the cylinder on the outlet side. This permits the spring and line pressure to close the valve before any steam can escape. The trap will remain closed as long as steam remains in contact with the bi-metal element while condensate accumulates in the body. Upon reaching the element the lower temperature of the condensate causes it to reopen the pilot orifice so water can enter the cylinder above the piston and open the valve for discharge.

Excess pressure in the return main, for any reason, will act against the bottom of the piston and close the trap to prevent backflow. Action within the trap is visible through a sight glass in the side of the housing. Pressure rating is to 250 lb. employing a semi-steel body with stainless steel trim and a bronze strainer.

Sizes range from 1½ to 3 in. with threaded connections and from 1½ to 5 in. with flange connections. Temperature is maximum at 720 deg. F. Capacity is 500,000 lb. per hour with pressure at 650 pounds. Overall dimensions are about 15 by 6½ by 11 inches.

If you write maker identify as IEN - 9829

REAMING . . Fourteen piece set, seven pairs for dowel pin holes

Source: LAVALLEE & IDE INC.
100 Grape St., Chicopee, Mass.

Nominal sizes range from ¼ to ½ in. in this new set of precision reamers to finish dowel pin holes. The ¼-in. set includes a reamer that is 0.0020 in. undersize and 0.0005 in. oversize. The others measure 0.0020 in. undersize and 0.0005 in. oversize. Tolerance is plus nothing and minus 0.0002 inch. The set is designed for tool maker's use primarily. The sets are cradled in a wood box. The shank on each one is stamped with its exact size.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9830

REMOVES FUMES—DUST FASTER!

High Quality PRESSURE BLOWER

only $49.50

REG. PRICE $70.00

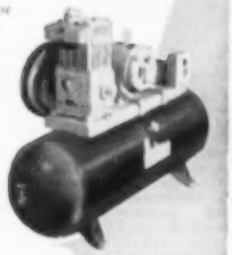
For the fast, efficient elimination of welding fumes, sawdust, or other air impurities, you can depend on this precision-made, all-aluminum high-pressure blower. Made with 5½" inlet and 3½" outlet. Enclosed ¼ H.P. Westinghouse single phase motor, 115 V. A. C. provides 3450 R.P.M. and up to 450 C.F.M. Immediate delivery! Ask for #BL50W.

STANDARD ELECTRIC MFG. CO., INC.
West Berlin 12, N. J.

If you write maker identify as IEN - 9831

Get the most from COMPRESSED AIR Use a Quincy Compressor

Quincy Compressors provide adequate air for a multitude of jobs in your plant. Use Quincy Compressors for blowing, spraying, starting, lifting, braking, driving, chucking, filling, and many other operations. Quincy Compressors range in size from 1 to 90 c.f.m. They're available in both air or water cooled units in a variety of mountings. Write today for free details. Quincy Compressor Co., Dept. H-26, Quincy, Illinois.



Quincy COMPRESSORS

QUINCY COMPRESSOR CO., Quincy, Illinois
Branch Offices: New York • Philadelphia • Chicago
St. Louis • Dallas • San Francisco

If you write maker identify as IEN - 9832

DRY-TYPE TRANSFORMERS . . . via Graybar

Cut wiring costs and line losses with these easy-to-install units

Designed to serve lighting and other 115- or 230-volt loads from power circuits, Graybar-distributed dry-type transformers are a cinch to install. They can be mounted anywhere — on columns, walls, platforms or (in smaller sizes) on machines themselves.

Once in place, they require virtually no inspection or maintenance.

G-E dry-type transformers are available in two styles: Type M—0.25 to 10 kva. for indoor or outdoor use; Type D—15 kva. and up for indoor service. For specifications and prices on either type, call your local Graybar Representative. *Graybar Electric Co., Inc. Executive Offices: Graybar Building, 420 Lexington Avenue, New York 17, N. Y.*

Call Graybar first for . . . Everything Electrical GraybaR

If you write maker identify as IEN - 9833

Just a Step From Racine

famco COST CUTTING machines

FAMCO MACHINE COMPANY
3110 SHERIDAN ROAD • KENOSHA, WISCONSIN

Famco proudly announces the purchase of new plant and office facilities at Kenosha, Wisconsin. Part of an expansion program undertaken by Famco, the new buildings—situated on twelve acres overlooking Lake Michigan—add substantial floor space to Famco's operation . . . with sufficient ground for further expansion as needed. It is requested that all future contact with the Company be made at the above address.

If you write maker identify as IEN - 9834

New Flexible Sealing T-J AIR CYLINDER

Designed with revolutionary application of Super-Cushion

It's *sealed with pressure*—insures positive cushion action combined with automatic valving action for fast return stroke . . . eliminates binding and sticking . . . operates with *low friction, minimum wear,* and *added power* due to higher efficiency. Many more plus features! Wide range of styles and capacities. Write for bulletin 252. The Tomkins-Johnson Co., Jackson, Mich.

50 YEARS' EXPERIENCE

TOMKINS-JOHNSON

If you write maker identify as IEN - 9835

around the world, it's

HOOVER BALLS

made of

CHROME STEEL • CARBON STEEL • STAINLESS STEEL BRASS • BRONZE AND MONEL METAL

"America's Foremost Ball Manufacturer"

HOOVER BALL and BEARING CO.
Ann Arbor, Michigan

If you write maker identify as IEN - 9836

Femco COMMUNICATION

"Stopping an overloaded runaway trip saved smash-up of locomotive and store building."

FOR MINES FOR MILLS

Easy to Buy • Easy to Install • Easy to Use • Make Us Prove It

Femco TROLLEYPHONE

Uses existing wires and power supply to provide clear voice communication over loud speakers. Bulletin No. 25.

Femco AUDIOPHONE

Wherever wires can be laid or run you can have Femco Audiophone systems installed. Bulletin No. 26.

LOW COST • LOW MAINTENANCE

"YOUR VOICE OF SERVICE"

FARMERS ENGINEERING & MANUFACTURING COMPANY
549 Brighton Ave., Pittsburgh 27, Pa.

If you write maker identify as IEN - 9837

ROCK DRILLING . . Water feed head to drive and flood diamond core drill

Source: WHEEL TRUEING TOOL CO.
3230 W. Davison Ave., Detroit 4, Mich.

List is $38.50

Drive shank at the rear of this new Truco Water Swivel applies in a ½-in. chuck on an electric or pneumatic portable drill to drive a diamond equipped core drill measuring ¼ to 2½ in. in outside diameter. In the side of the head is a quick equipped connection through which water is introduced to feed down through the head and the core drill to flood the drill and the work for clean fast cutting in materials such as concrete, granite, brick, glass, tile.

A ⅝-in. hole can be drilled through 2 in. of brick in about a minute. A hole measuring 1 in. in diameter can be drilled to 4 in. in depth through glazed tile into a concrete floor in about 2 minutes. This includes locating, core removal and clean-up. Standard equipment includes 10 ft. of rubber hose. A splash adapter and an additional 10-ft. hose can be added to collect the water that issues from the drilled hole. This adapter adds $15 to the list price. A ¼-in. diamond drill lists at $21.45. A 2½-in. unit lists at $77.35. Rebate on used drills ranges from 75 cents to $14.

If you write maker identify as IEN - 9838

TIMING . . Spring wound stop clock reads in seconds to 60 minutes

Source: ANDREW TECHNICAL SERVICE
3803-7 N. Clark St., Chicago 13, Ill.

List is $17.50

Three methods of operation can be set up with this new Durachron stop clock. The first includes time out operation for action which is interrupted during an operation. The second is straight timing for uninterrupted observation. The third is snap back timing in which elapsed time is read while the sweep hand is in motion and then the hand is returned to zero simultaneously to start another reading. The 4 in. dial can be read at a considerable distance. The large hand counts off seconds. The small one totals minutes.

If you write maker identify as IEN - 9839

Refrigeration has been added to the sulphuric acid bath employed to anodize aluminum to hold the bath temperature between 25 and 50 deg. F. Sapphire-hard surfaces are produced on the work by the combination of acid and repeated powerful charges of electricity. The Brunner refrigeration takes away large amounts of heat generated by the current. Installation is made possible by the use of lead-clad Cupralum copper coils which are not subject to chemical attack.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9840

FRUSTROSITY* CASE No. 32: Mr. Thixotruble is having "peculiar behavior" problems. If he had a 1952 Brookfield Viscometer at hand, he would know all the viscosity answers — *could make determinations directly in centipoises in a matter of seconds in lab, plant, or both.* Whether the materials you work with are Newtonian or non-Newtonian, you owe it to your wife, customers and co-workers to get up-to-date information on Brookfield Viscometers *adaptable to any problem from less than one to 32,000,000 centipoises.* Ask your Lab Supply House or drop a line to Dept. G, Brookfield Engineering Laboratories, Inc., Stoughton, Mass.

*FRUSTROSITY is that frustrated condition a man gets into when his problem is Viscosity Determination or Control and he hasn't asked BROOKFIELD.

If you write maker identify as IEN - 9841

SAFETYMIX

EXTRA SHOWER SAFETY . . . at no extra cost

PROTECTS AGAINST SUDDEN SCALDS

. . . Safetymix, world's leading pressure-actuated non-scald shower valve gives safety in the shower. Safetymix automatically shuts down flow if either hot or cold water fails.

HOLDS SHOWER TEMPERATURE CONSTANT

. . . Even with excessive pressure fluctuations up to 85%, Safetymix still maintains constant discharge temperature.

LIFETIME SHOWER VALVE

. . . The most rugged shower control valve made. Only Safetymix has the patented Flow Control Spindle with but *one* moving part to control *all* valve functions. Built to last a lifetime.

GET FREEDOM FROM COSTLY MAINTENANCE

. . . Safetymix is designed with self-cleaning action to prevent clogging and save water. All parts accessible from the front. As easy to fix as a faucet.

100,000 Installations Can't Be Wrong. Used by U. S. Army, Navy, Merchant Marine, colleges, industrial plants, hotels, clubs, hospitals, apartments and homes.

Send for bulletin and prices.

SAFETYMIX — MADE BY THE MAKERS OF THE NEW SYMMONS TEMPERING-CONTROLLER

Symmons ENGINEERING COMPANY
741 TREMONT ST., BOSTON 18, MASS.

If you write maker identify as IEN - 9842

M·Z·B **PRECISION VERNIER CALIPERS**
Accurate Dependable

6" size

A tool to comply with the most exacting demands. Made by the leading European precision tool craftsmen. Measures inside, outside, thread and depth.

The following models have the famous M·Z·B cam lock which guarantees fixed and never shifting setting when pressure on lock is released.

#30-61	Chrome Steel	.001" & 1/128"	$14.00
#30-64	Chrome Steel	.001" & 1/20 mm	$14.00
#30-62	Stainless Steel	.001" & 1/128"	$16.50
#30-65	Stainless Steel	.001" & 1/20 mm	$16.50
With set screw			
#30-78	Chrome Steel	.001" & 1/20 mm	$9.75

Total length of above models 8". Scale 6"

12" Calipers and Height Gauges also available

Leather cases supplied free of charge with each caliper

M·Z·B **MICROMETERS**

M·Z·B Micrometers 1" size to read .0001" with hardened threads, stop-nut and ratchet comparable to the best only $15.98. Made by the men who made precision tools famous with the "know-how" and experience that produced hundreds of thousands of the finest calipers and micrometers ever sold.

Send for our latest literature giving detailed information on these precision tools.

We also import fine precision pliers—send for information

INTER-CONTINENTAL TRADING CORP. 90 WEST STREET NEW YORK 6, N. Y.

If you write maker identify as IEN - 9843

GOES A LOT FARTHER

To Improve Production, End Dust Health Hazard Reduce Rejects and Maintenance Costs

HOFFMAN HEAVY DUTY VACUUM CLEANING

Bigger Capacity—Higher Vacuum

Now Available in 5 Sizes of Improved Portables. Stationary Systems in a Complete Range of Sizes. Write for New Bulletins A-814 and A-816.

AIR APPLIANCE DIVISION

U.S. HOFFMAN MACHINERY CORPORATION
103 Fourth Ave., New York 3, N. Y.
Canadian Plant: Canadian Hoffman, Newmarket, Ont.

If you write maker identify as IEN - 9844

FOR LIGHTNING-FAST *LOW-COST* PRODUCTION

Use the versatile

ELECTROPUNCH

WIDELY USED TO

STAKE

MARK

SWAGE

CUT OFF

RIVET

CRIMP

BEND PUNCH DIMPLE

Produces up to 10,000 pieces per hr!

For as low as $90.75, you can buy an ELECTROPUNCH (lightest model illustrated) and start increasing your small parts production. This low-cost, all-electric impact hammer features *controlled* impact. Ideal for steel stamping. Produces up to 10,000 pieces per hr. using automatic switching—up to 5,000 pieces per hr. with hand or foot switching.

Easy-to-use ELECTROPUNCH is portable, uses only one sq. ft. of bench space, plugs into any 115 V., A.C. outlet.

Write for descriptive folder.

BLACK & WEBSTER, INC.

Dept. 17 445 Watertown St., Newton 58, Mass.

Phone: Frank Webster Bigelow 4-6370

If you write maker identify as IEN - 9845

an ACCO product

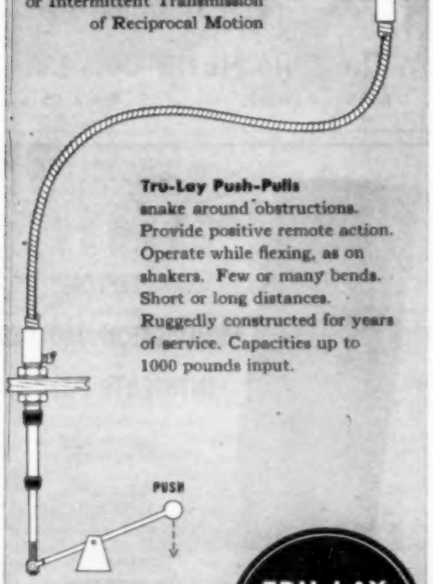
TRU-LAY PUSH-PULL CONTROLS

SOLID . . . as a rod

FLEXIBLE . . . as a wire rope

for Continuous or Intermittent Transmission of Reciprocal Motion

Tru-Lay Push-Pulls snake around obstructions. Provide positive remote action. Operate while flexing, as on shakers. Few or many bends. Short or long distances. Ruggedly constructed for years of service. Capacities up to 1000 pounds input.



Write our Detroit office today for DH-287

TRU-LAY PUSH-PULL CONTROLS

ACCO

AUTOMOTIVE AND AIRCRAFT DIVISION

AMERICAN CHAIN & CABLE

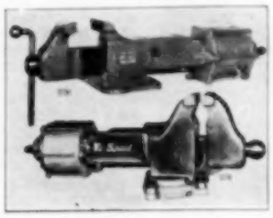
601 Stephenson Bldg., Detroit 2

2475 Porter St., Los Angeles 21 • Bridgeport, Conn.

If you write maker identify as IEN - 9847

VISE . . Pneumatic assembly mounts on bench, 1⅞ in. power stroke

Source: VAN PRODUCTS CO.
3734-21 W. 12th St., Erie, Pa.



50 inch piston area

Model 610DP and Model 1000DP are new designs of the company's air operated vise, previously described IEN-3279-49. The new assemblies are characterized by construction that assists in maintenance and permits continuing service under difficult conditions. Both designs mount jaws measuring 6 in. in width with maximum openings of 10 and 11 inches. Model 610-DP is available with a stationary or swivel base. The other is supplied with a swivel base only. Smooth jaw faces are available on both and Model 1000-DP mounts Jaws for pipe to 6 inches.

The operating cylinder is identical in outer appearance with the original design and provides a piston stroke measuring 1⅞ inches. The piston has been redesigned so it now is held together in leak-proof assembly by a single bolt and is constructed of Micarta with a heavy steel stiffening plate. Dirt, metal chips that find their way into the air cylinder will embed themselves in the Micarta where they will not seriously score the cylinder wall. Both vise designs are intended for foot operation and for manual adjustment at the front.

If you write maker identify as IEN - 9848

RECORD KEEPING . . Microfilmer for reductions of 19, 24, 32, 40 to 1

Source: EASTMAN KODAK CO.
341-45 State St., Rochester 4, N. Y.

Rents for $43.50 per month

Documents from small reference cards to letters and statements are stacked on the feeding shelf of this new Bantam unit in the company's Recordak Microfilmer equipment. They are microfilmed one at a time in this position and then dropped into a receiving hopper immediately below. The feeder will insert 500 check size documents per minute into the machine. It will take documents to 11 in. in width and in unlimited length.

A 100-ft. roll of 16-mm. film is placed in a film chamber in the top of the housing after lifting a hinged cover. One-half of the film width is exposed on the first run when the machine is set for reductions of 32 or 40 to 1. The roll is then reversed and documents are recorded down the other side in an operation known as duo filming. The standard method is employed to use the full width of the 16-mm. film for reductions of 19 or 24 to 1. List price with one lens kit for a specified reduction is $2,225. This price includes a Model P-40 reflecting type film reader with a 40X magnification.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80

If you write maker identify as IEN - 9849

YOU asked for these SPECIAL FEATURES in a Chemical Pump...

1 QUICK, EASY DISMANTLING without disturbing piping or driver.

2 ALL PARTS INTERCHANGEABLE except pump case and impeller. Four pump sizes fit one basic assembly.

3 CORROSION-RESISTANT CATCH BASIN is integral part of pump case—protects bearing bracket and base plate from corrosive leakage.

4 SIMPLE ADJUSTMENT to compensate for impeller wear.

+ PLUS MANY OTHER important design advantages . . . double-protected, grease-lubricated bearings . . . stuffingbox under suction pressure . . . and extra large shaft.

...Now BJ brings them to You!

Byron Jackson Co.

P. O. Box 2017, Terminal Annex, Los Angeles 54, Calif.

Offices in Principal Cities

Available in four sizes, capacities to 450 gpm, heads to 100 ft. Write for details.

If you write maker identify as IEN - 9850

3 VALUES!

★ One Piece Construction
★ Wide Wire Range
★ Economically Priced

BLACKBURN Hi Strength TERMINAL LUGS

Strongly constructed—all in one piece—yet small and compact, to fit in tight quarters. UL approved. Only 6 sizes cover a range from No. 14 to 1,000,000 CM. Specify Blackburn and get a quality lug in the low price field.

JASPER BLACKBURN CORP.
35 Madison St., St. Louis 6, Mo., CEntral 3007

If you write maker identify as IEN - 9851

FOR **PRECISION** Carbide Finishing

ELGIN DIAMOND IN DYMO-C

...Designed for Carbides!

Where precision really counts, finishers specify ELGIN Diamond because they can be sure of:

- *consistent accuracy—uniform cutting action*
- *flawless finishes every time, in less time*

Actual field tests prove this new diamond abrasive up to 20% faster for finishing carbides.

Send for the DYMO-C bulletin today!

ABRASIVES DIVISION, Dept. H
ELGIN NATIONAL WATCH COMPANY
ELGIN, ILLINOIS

If you write maker identify as IEN - 9852

Delpark FULL-FLOWING SELF CLEANING

COOLANT FILTERS

FOR SOLUBLE OILS and CUTTING OILS

A gravity filter, complete and continuous filtration of the coolant removes heat-bearing solids as it comes from the work. More uniform limits, better finish, and greater accuracy are maintained with a clean wheel and lower coolant temperature.

Compare these points with your present coolant system:

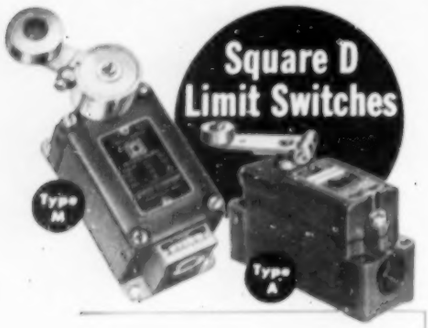
- **Keeps wheel clean for faster, more accurate cutting and longer life.**
- **Less wheel dressing required.**
- **Uniform coolant temperature.**
- **Limits more easily maintained.**
- **Extended coolant life.**
- **No down time for de-sludging reservoir.**
- **Less wear on coolant system.**

These are but a few of the many advantages offered by Delpark Full-Flowing, Self Cleaning Coolant Filters. For more complete information:

Delpark
INDUSTRIAL FILTRATION
Backed by 30 Years Experience in Industrial Filtration

INDUSTRIAL FILTRATION COMPANY
517 Industrial Avenue • Lebanon, Indiana

If you write maker identify as IEN - 9853



for Machine Tool Service

Class 9007 Type A—small precision switches with variety of roller arm or push rod operating mechanisms—flush or surface mounting. Accurate snap switch action.

Class 9007 Type M—heavy duty switches with accurate, quick-acting latch mechanism. Variety of operating arms—double break silver contacts—accessible terminals—long life. *Write for Bulletin 9007A and M. Square D Company, 4041 N. Richards St., Milwaukee 12, Wisconsin.*

Ask Your Electrical Wholesaler for Square D Products

SQUARE D COMPANY

If you write maker identify as IEN - 9854

HANSEN HOSE CLAMP

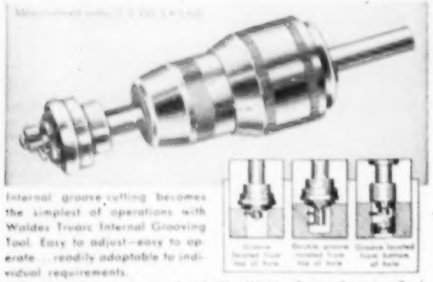
2 WAY GRIP RE-USABLE . . .

Easy to install, easy to remove for hose renewal. May be used over and over again. Ferrule with special internal left-hand thread holds outside of hose—right-hand stem thread locks inside. Long stem prevents cutting hose. Available for hose 5/16" to 3/4" I.D. with male or female pipe threads, or with swivel nut. All parts machined from solid brass rod.

THE HANSEN MANUFACTURING COMPANY
4031 WEST 150th STREET • CLEVELAND 11, OHIO

If you write maker identify as IEN - 9855

Waldes Truarc Internal Grooving Tool
for precision cutting of internal grooves in bores and housings
FAST! ECONOMICAL! NEEDS NO SKILLED LABOR!



Internal groove cutting becomes the simplest of operations with Waldes Truarc Internal Grooving Tool. Easy to adjust—easy to operate . . . readily adaptable to individual requirements.

Designed for use in any hand drill or automatic drill press and screw machine . . . assures a concentric recess without injury to metal. Operates by fingertip pressure—especially suitable for unskilled operators.

The Waldes Truarc Grooving Tool when used in an electric or pneumatic hand drill, can be taken to the job eliminating disassembly and excessive handling . . . resulting in all around savings in time and costs!

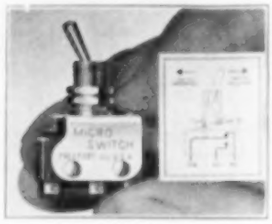
Write now for descriptive brochure giving mechanical details, cutting sizes . . . extra features

WALDES TRUARC GROOVING TOOL
WALDES KOHINOOR, INC.
47-16 Austel Pl., Long Island City 1, N.Y.

If you write maker identify as IEN - 9856

SWITCH . . Sub-miniature snap acting, toggle operated, 5 amp. on 110 volt ac.

Source: MICRO SWITCH
30 E. Spring St., Freeport, Ill.



$3.60 and $5.50

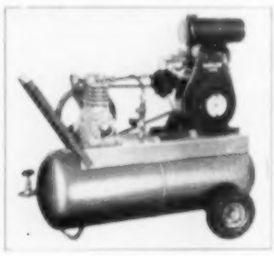
Type 6AT is a new assembly of the company's sub-miniature sensitive snap acting switch, Type 1SMI, and a toggle mechanism that is detented in both toggle positions. The toggle bushing is threaded and equipped with two hexagon nuts for panel mounting. Two assemblies include one of the switch units for single-pole double-throw service or two of the units for double-pole double-throw application. In the second case the two switches are not arranged for simultaneous action.

Operating force is 0.5 pound. Total travel of the toggle lever is through 40 degrees. Weights are 0.02 and 0.03 lb. for the single and double switch assemblies. Overall dimensions are about 3/4 in. in length, 1 3/8 in. in height. Overall width is about 5/8 and 3/8 inch.

If you write maker identify as IEN - 9857

COMPRESSOR . . Portable assembly, tank mounted, 8.5 cfm., 150 pounds

Source: DECKER MFG. CO.
752 Decker St., Rockford, Ill.



For utility use

Model CT-263 is a new assembly of two-cylinder air-cooled single stage compressor assembled with a belt connected engine or motor on an 18-gal. tank. It is equipped with a support at one end and semi-pneumatic ball bearing wheels on the other. The engine driven assembly shown in the illustration includes a 2.6-hp. Kohler gasoline engine with governor control. A 1-hp. electric motor can be specified in its place.

Equipment includes 25 ft. of air hose with an air chuck and brass fitting. Available accessories include an air hammer and a suction unloader to adapt the unit for spray painting. A pressure gage completes the assembly.

If you write maker identify as IEN - 9858

Tellurium added to copper produces an alloy with conductivity 90 per cent that of pure copper plus machinability approaching that of free-cutting brass. Chase Brass can supply the alloy in hard and half-hard temper in rod and bar stock to make electrical and electronic components, welding and cutting tips. The alloy also can be hot or cold worked.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . . Descriptions . . . Ratings . . . See Page 50

If you write maker identify as IEN - 9859

DUST REMOVAL costs less with DUSTUBE

HERE'S WHY

- Dustube Collectors control dust and fume with virtually 100% efficiency.
- Operating and maintenance costs are unusually low due to a unique simplicity of operation.
- Material is collected in a dry state and can be re-used without thickening, filtering or drying.
- Power costs are low.

WRITE TODAY FOR CATALOG 72-B

American dustube COLLECTORS
WHEELABRATOR & EQUIPMENT CORP.
507 S. Byrkit St., Mishawaka Ind.

If you write maker identify as IEN - 9860

ACEC

ACEC vertical hollow Shaft Pump Motor

NOW ON HAND
Integral Horsepower Electric Motors—conforming strictly to NEMA SPECIFICATIONS

FULLY GUARANTEED

MOTORS EXCEEDING 200 HP. BUILT TO ORDER

Manufactures ELECTRIC MOTORS for most Industrial Purposes

ACEC—Ateliers de Constructions Electriques de Charleroi, of Belgium—offers American customers wide selection from a diversified line of electric motors.

Conforming strictly to NEMA SPECIFICATIONS, outstanding 3-phase units are immediately available from warehouse stock in the United States, and ACEC Distributors and Service Shops, from coast to coast, are prepared to handle customers' service needs promptly.

Whatever your requirements, write, wire or telephone the nearest ACEC of fice or representative.

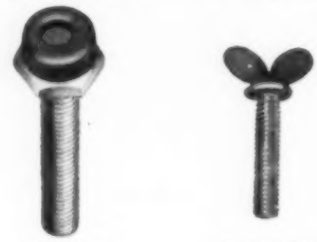
IMMEDIATE DELIVERY from NEW YORK • CHICAGO • KANSAS CITY NEW ORLEANS • DALLAS and LOS ANGELES Warehouses

BELGIAN ELECTRIC SALES CORPORATION
Main Office: ONE E. 53RD ST., NEW YORK 22, N.Y. • PLAZA 8-3105

BRANCHES AND AGENCIES: Los Angeles • San Francisco • Chicago • Kansas City • Cleveland • Dallas • New Orleans • Pittsburgh • Louisville • Washington D.C. • Youngstown • Savannah • Montreal • Puerto Rico • Mexico City

If you write maker identify as IEN - 9861

OHIO Adjusting Screws May Simplify Your Requirements



FB Ohio Screw
With Rubber Pad
Thread Sizes 5/16-18 to 1/2-20

ST Ohio Shoulder
Thumb Screw
Thread Sizes 10-24 to 1/2-20

Material Low Carbon Steel

For samples and information about Ohio Adjusting Screws send to

The Ohio Nut & Bolt Co.
604 Front Street Berea, Ohio

If you write maker identify as IEN - 9862

Since its introduction, Teflon's unique qualities have made it desirable for a multitude of applications. The one limiting factor has been the difficulty of production molding Teflon into any but the simplest forms. Sparta has overcome this difficulty.

Bring your Teflon molding problems to Sparta

Sparta has proven that Teflon can now be production molded into shapes far more intricate than had been considered possible. Sparta "know how" is the answer to your Teflon molding problems.

*DU PONT'S TRADEMARK FOR ITS POLYTETRAFLUOROETHYLENE RESIN

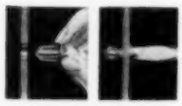
SPARTA HEAT TREAT CO.
EAST SPARTA, OHIO PLASTICS DIVISION

If you write maker identify as IEN - 9863

Have you a similar use for this 1-piece fastener?

It's a Shelf Support...For ranges or refrigerators—in plastic and metal. Leading appliance makers have achieved substantial installation savings through it.

It's a Cabinet Door Strike...Simple to install; eliminates welding and cuts assembly cost. Any head can be designed without affecting fastening principle.



It's a Blind Rivet...Or a removable fastener. It locks and unlocks with a 90° clockwise rotation. No mating parts such as nuts or receptacles.

It's a Lifter Knob or Dashboard Plug...Plastic Spring-Lock heads are molded around steel inserts, giving strength at point of load or impact. Any shape head can be molded in any color.

What's Your Application?

...Tell us how you can use Spring-Lock Fasteners in your products. We'll be glad to work out the details with you.

Send for more data and *Free Samples* today.

Simmons Fasteners

QUICK-LOCK • SPRING-LOCK ROTO-LOCK

SIMMONS FASTENER CORP., 1758 North Broadway, Albany 1, N. Y.

If you write maker identify as IEN - 9864

52-Page Thermostat Catalog shows you . . .

How To Get Closer Temperature Control At Lower Cost

This Fenwal catalog is the most comprehensive guide to thermostat application ever published. It shows you:

WHY Fenwal THERMOSWITCH® thermostats respond at the preset temperature you want (between −100°F and +1500°F) within the desired operating differential (can approach 0.1°F in a well-designed system).

HOW to choose the right THERMOSWITCH unit from the ten standard types for controlling temperatures of solids, liquids or gases.

WHERE to apply THERMOSWITCH controls in relation to heating elements in ovens, incubators, stills, dryers and other equipment.

WHEN special modifications may be added to standard THERMOSWITCH units to fit specific conditions.

HOW MUCH standard THERMOSWITCH thermostats and special modifications cost. You'll be surprised at the low list prices.

SEND FOR YOUR FREE COPY of this new Fenwal catalog (No. 400) today. Fenwal, Incorporated, 79 Pleasant St., Ashland, Mass.

Fenwal

THERMOSWITCH®

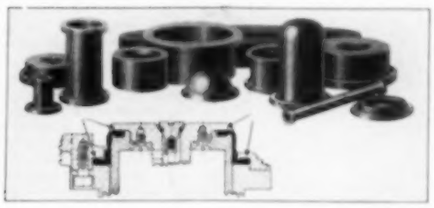
Electric Temperature Control and Detection Devices

SENSITIVE... *but only to heat*

If you write maker identify as IEN - 9866

SEALING . . Molded rubber flexibly seals piston to cylinder wall

Source: FARRIS HYDROSEAL CORP. 550 Commercial Ave., Palisades Park, N. J.



Illustrated details in Bulletin 5004

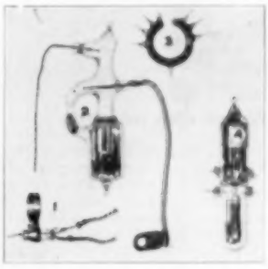
HydroSeal trade names a new design of molded part made of natural rubber, Buna-N, Butyl or other synthetic elastic material for given requirements. Each unit is made to specified dimensions and axial movement. It is assembled in a mechanism to seal by being clamped mechanically between two relatively moving members such as a cylinder and a piston as indicated.

The rubber stretches as the piston moves forward. It contracts when the piston returns. Its elastic properties assist in the return movement so spring return need not be employed in single acting mechanisms. It can be supplied for pressures to 3,000 pounds. It eliminates the need for piston rings in a piston and cylinder assembly. Diameters range from ⅜ to 24 inches. Shapes and lengths with edge gripping beads are engineered for a given installation.

If you write maker identify as IEN - 9867

SWITCH . . Mercury design, as specified, to minus 70 deg. F.

Source: KAHL SCIENTIFIC INSTRUMENT CORP. P. O. Box 1166-A, El Cajon, Calif.



Tungsten electrodes

Illustrated are four representative units in the company's line of special mercury switches. Each is designed for given application, electrical capacity and operating characteristics.

No. 1, to the lower left in the illustration, is a miniature on-off unit measuring $\frac{3}{16}$ in. by ⅝ in. over the glass enclosed element. No. 2 is a time-delay on-off design. No. 3 is a multiple contact ring switch and No. 4 is a second time-delay multi-contact assembly. The delay interval and other characteristics can be specified for a given application.

Each switch employs the company's new eutectic mercury which has a freezing point at minus 80 deg. F. instead of minus 36 deg. F. as for ordinary mercury. This permits operation at temperatures as low as minus 70 deg. F. Sequence operation is possible through the multiple contact arrangements, as well as time delay, in the switch construction.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9868

RUGGED or SENSITIVE

A PRATT & WHITNEY J-O KELLERFLEX

FLEXIBLE SHAFT MACHINE

Does MORE Jobs BETTER

Burring, polishing, grinding and cutting; Pratt & Whitney J-O Kellerflex Flexible Shaft Machines do more work better and faster. The wide choice of handpieces, cables and tools available for use with the Model J-O adapts it to a multitude of jobs from the delicate jewelry dies and denture molds to castings of approximately 5 pounds. Chucking capacities range from 3/32" to 1/4". Motor is 1/8 h.p.; 4 machine speeds are provided — in changing it is necessary only to loosen one wing nut. Bench stand, floor stand or suspension types are available; all feature full 360° swivel mounting for maximum convenience. Send now for complete information; write on your Company letterhead for Bulletin No. 304-1.

PRATT & WHITNEY

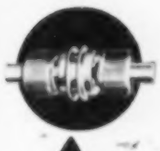
DIVISION NILES-BEMENT-POND COMPANY

WEST HARTFORD 1, CONN., U. S. A.

Branch Offices: Birmingham • Boston • Chicago • Cincinnati • Cleveland • Detroit • New York • Dallas (The Fleece Co.) • Houston (The Fleece Co.) • Los Angeles • Philadelphia • Pittsburgh • Rochester • St. Louis • San Francisco • Export Dept., West Hartford, Conn.

If you write maker identify as IEN - 9869

Rockford Clutches Help Control



High Speed Knitting Machines

REINER High Speed Tricot Machines must have delicately adjusted controls to assure the uniform high quality demanded by fabric mills. ROCKFORD CLUTCHES contribute to the easy operation, steady production and safety of REINER machines. Let ROCKFORD clutch engineers help solve your power transmission control problems.

B-W ENGINEERING MAKES IT WORK

B-W PRODUCTION MAKES IT AVAILABLE

ENGINEERING BULLETIN SENT ON REQUEST

ROCKFORD CLUTCH DIVISION 101 Catherine Street, Rockford, Illinois U. S. A.

ROCKFORD CLUTCHES

If you write maker identify as IEN - 9870

CAN'T FIND THE RIGHT INSTRUMENT?

You need this Taylor Guide

Here is a basic guide to all of Taylor's conventional instruments for indicating, recording and controlling almost any process variable: temperature, pressure, humidity, flow, liquid level, load, speed and density. A special section discusses special function instruments such as time-schedule, pneumatic set, etc.

Keep it handy as a reference whenever you're considering instrumentation. Write for Bulletin 98170, Taylor Instrument Companies, Rochester, N. Y., or Toronto, Canada.

Instruments for indicating, recording and controlling temperature pressure, flow, liquid level, speed, density, load and humidity.

TAYLOR INSTRUMENTS MEAN ACCURACY FIRST

If you write maker identify as IEN - 9871

P&H ZIP-LIFT

TAKE A TIP BUY A ZIP!

Whatever your handling problems include, chances are the Zip can save you time and money with fast, effective "thru-the-air" handling. It's a real wire rope electric hoist — with full magnetic push button control. Safer — more dependable — built for lifetime service. 2,000 lbs. capacity; with bolt, hook, or trolley mounting. It's America's finest small hoist.

SEND FOR YOUR FREE COPY

This fully illustrated 20-page bulletin will give you many cost-cutting ideas. Write for it today. Ask for NEW ZIP-LIFT Bulletin.

HARNISCHFEGER CORPORATION

4520 W. NATIONAL AVENUE • MILWAUKEE 14, WISCONSIN

If you write maker identify as IEN - 9872

which roller bearing is best for your problem?

. . . obviously one that is best suited to your machinery's particular requirements. You would want maximum capacity, smooth precision performance, long life, dependability with the least maintenance and of course an adequate range of sizes. McGill MULTIROL Bearings have been delivering this insurance for successful machinery for over 20 years. With today's increasing production demands it will pay you to specify MULTIROL. Write for complete information in the new McGill Catalog No. 52 today.

CF Series

Multirol CF Series Bearings have an extra heavy outer race section that provides loads in cam actioned or guide and support roller applications on automatic machinery.

Rollers Roll More Load

Write today for the new Catalog No. 52. McGill Manufacturing Co., Inc., 100 N. Lafayette St., Valparaiso, Indiana.

McGILL — precision bearings

If you write maker identify as IEN - 9873

PROTECT YOUR PRODUCTS DURING SHIPMENT *with*

S·S·White PLASTIC DUMMY SHIPPING PLUGS AND CAPS

Made of tough, non-brittle plastic. Available from stock molds in a wide range of sizes. Details in *BULLETIN P-4601*. Copy mailed on request.

CONTRACT MOLDING *in all standard thermoplastic and thermosetting materials*

THE S·S·White PLASTICS DIVISION
DENTAL MFG. CO. Dept. NP, 10 East 40th St. NEW YORK 16, N. Y.
WESTERN DISTRICT OFFICE: Times Building, Long Beach, Calif.

If you write maker identify as IEN - 9874

A Pleasant Surprise

Anyone who feels that a gear is a gear has a pleasant surprise awaiting him at Earle.

Here, we've found that we've always been able to add something extra to a gear—in manufacture, performance, engineering. As a matter of fact, we've been doing this for nearly half a century—giving the critical customer precisely the kind of gears he wants.

Why not become one of that special group which has learned that gear value can be determined—point by point? THE EARLE GEAR & MACHINE CO., 4707 Stenton Ave., Philadelphia 44, Pa.

It's good business to do business with EARLE.

EARLE GEARS

If you write maker identify as IEN - 9875

GAGE . . Indicator and magnet stand to check contour, dimension, roundness

Source: CHICAGO DIAL INDICATOR CO.
178-82 N. Wacker Drive, Dept. E, Chicago 6, Ill.

$36.50 to $51.50

New combination of one of the company's dial indicators and a mounting stand equipped with a permanent Alnico magnet make up a new test set to quickly obtain accurate readings. Any of three models of indicator, with dial graduated to 0.001, 0.0005 and 0.0001 in., can be specified with the company's center-lug back construction and a 6-in. holding rod and knurled screw.

The adjustable dial has a positive internal lock for accurate setting. The magnet provides 100-lb. pull to firmly position the unit on a surface. A switch at the front of the base can be turned to "short" the magnet when the gage is to be moved. Base dimensions are 1¼ by 3 inches. Overall range of the three available dial indicators are 0.200 in. in 2 revolutions, 0.125 in. in 2½, and 0.080 in. in 6 revolutions.

If you write maker identify as IEN - 9876

CONVEYING . . Troughing rollers are mounted at angle in channel frame

Source: ALVEY CONVEYOR & MFG. CO.
9303 Olive St. Road, St. Louis 24, Mo.

Welded reinforcements brace the channels

Alternate rollers are tilted in the assembly of this new conveyor to form, in effect, a trough that will center work moving over the conveyor by gravity. The new design is intended to handle bar stock, pipe, lumber, artillery shells, structural shapes. The conveyor is available to specification for width, length and load carrying capacity. It is not intended to convey long materials around curves.

Identify as IEN - 9877

Long taper bores can be made easily and accurately by a new combination of two Madison boring bars. One bar carries a series of bits set to cut progressive steps. It is used first. The second bar mounts a floating taper cutter that removes the step shoulders and finishes the bore. One manufacturer saved about eighteen hours of machining and hand-fitting by changing over to the new bars from a cam type design.

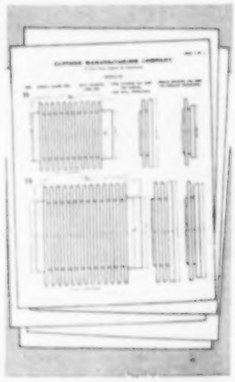
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9878

A PAID ADVERTISEMENT BY CLIFFORD MFG. CO.

BELLOWS TEMPLATE KIT

Offered to help busy designers and draftsmen trace twenty common bellows sizes quickly and accurately.



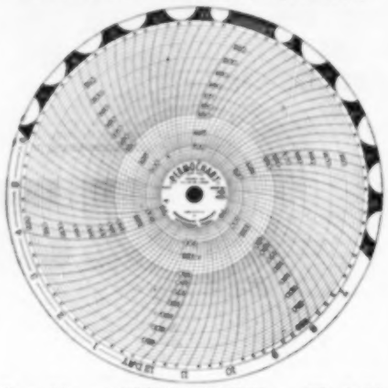
This free bellows template kit will save you time and work reproducing multiple bellows convolutions. Templates cover 20 most popular bellows sizes.

You just place the right template under tracing paper with center line of template matching center line of your drawing. Body and type of bellows ends can then be quickly traced and dimensions added from template. Templates give standard dimensions within close limits of true scale.

This template kit, in a handy cardboard envelope, includes full directions and table of Clifford Hydron Bellows sizes and characteristics. Send for your free kit today. Clifford Manufacturing Company, 100 Grove Street, Waltham 54, Massachusetts.

If you write maker identify as IEN - 9879

LONG-LIFE PLASTIC CHARTS



Reusable — PERMOCHART* — Washable

You can use WASHABLE laminated plastic "PERMOCHARTS"* on all your circular recording and controlling instruments. Convenient to use, they'll save you time and expense.

* Guaranteed serviceable life—TWO YEARS. * Cost per day only $ .00205 to $ .00342. * Available for any instrument using circular charts. Made of 100% "Vinylite" plastic laminated construction.

Send for sample of PERMOCHART Construction

*Reg.

ALLEGHENY PLASTICS, INC.
390 CHESTNUT ROAD SEWICKLEY, PA.

If you write maker identify as IEN - 9880

HAND HYDRAULIC PUMP

Single and Double Designs

To 20,000 P. S. I.

Interchangeable Pistons ⅛-½-¾ inch

★

Integral Release Valve

★

Dual Pump Unit Reservoir 360 Cu. in.

Pressure range is 3,000 to 20,000 P.S.I. Pipe connections ¼" N.F.T. Handle length is 18 inches. Weight is 8 to 18 pounds. Unit can be bolted or welded into position.

WILLIAM S. PINE
1637 E. 22nd St., Los Angeles 11, Calif.

If you write maker identify as IEN - 9881

Now Available For

WATER FILTERING

The Great

MARVEL SYNCLINAL FILTERS

SUMP TYPE (Cutaway)

Capacities of (Line Type) 5 to 50 gpm. (Sump Type) 5 to 100 gpm. Monel mesh sizes 30 to 200.

LINE TYPE (Cutaway)

- EASY TO CLEAN
- OPERATE LONGER BETWEEN CLEANINGS
- EFFICENT
- NO MOVING PARTS TO WEAR OR GET OUT OF ORDER

Outstanding qualities made Marvel Synclinal Filters the choice for hydraulic oil systems. The same qualities are now available for water filtering, in both sump and line types. Line models operate in any position and may be serviced without disturbing pipe connections.

Write For WATER FILTER DATA

MARVEL ENGINEERING COMPANY
627 W. Jackson Blvd. Chicago 6, Ill.

If you write maker identify as IEN - 9882

TAYLOR–STILES CUTTERS

Standard equipment in many industries include special cutters for:

- ☐ Cutting cellulose, acetate, bakelite or other plastics for further processing.
- ☐ Cutting rubber stock for molding.
- ☐ Cutting thread waste for carding and blending.
- ☐ Cutting fiber in roving or sliver for staple.
- ☐ Cutting rags, straw, or other material for paper making.
- ☐ Shredding news, waste paper, box-board, etc. for packing material.
- ☐ Destroying confidential correspondence, used drawings, blue prints, etc.
- ☐ (some other cutting purpose).

Let us know your cutting problem and receive full facts about the efficient Taylor-Stiles Cutter or Shredder to meet it.

TAYLOR-STILES Company
CUTTING MACHINES & KNIVES

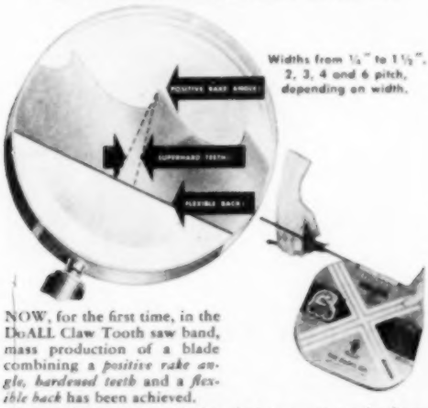
44 Bridge Street
Riegelsville, New Jersey

If you write maker identify as IEN - 9883

NEW!

DoALL CLAW TOOTH SAW BAND...

FOR METALS, WOODS, PLASTICS— EXTRA FAST CUTTING, EXTRA LONG LIFE



Widths from 1/4" to 1 1/2", 2, 3, 4 and 6 pitch, depending on width.

NOW, for the first time, in the DoALL Claw Tooth saw band, mass production of a blade combining a *positive rake angle, hardened teeth* and a *flexible back* has been achieved.

Faster, free cutting with less feed pressure results from the hooked, claw-like teeth which actually "pull" into the material being sawed.

The superhard teeth give longer blade life with substantially higher cutting efficiency up to time of replacement than that of non-hardened blades which must be resharpened periodically.

The result is a blade that industry has been waiting for —a blade that reduces bandsawing costs and increases production when properly applied.

Ask for Literature
Complete information, prices, specifications available upon request. Call your local DoALL Sales-Service Store or write:

Eliminates Resharpening and Resetting— it's cheaper to replace long-lived Claw Tooth blades than to use blades which must be resharpened a number of times during their life.

Increases Production — more output per machine and manhour because of faster cutting and elimination of blade removal for resharpening.

Cuts Costs—higher production and elimination of blade maintenance labor and equipment means lower bandsawing costs.

THE DoALL COMPANY
254 N. Laurel Ave., Des Plaines, Ill.
38 SALES-SERVICE STORES IN NORTH AMERICA

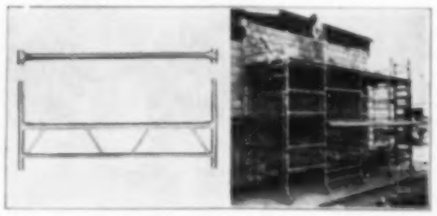
58—16½

DoALL

If you write maker identify as IEN - 9885

SCAFFOLD . . Pipe truss and tie bar slide into self-locking assembly

Source: JAGIEL MFG. CO.
Highway Three, Swanton, Ohio



$37.50 per eight piece section

Kwik Skaf trade names a new tubular steel assembly of a truss and a tie bar as shown to the left in the illustration. These two parts are employed in multiple to build sections measuring any multiple of 4 feet. A section consisting of four trusses and four tie bars stands 4 ft. in height and is listed as one unit.

The tie bar slides down over the uprights on the truss so notches in the bar heads engage flat sections on the top horizontal tube of the truss to hold a pair of trusses rigidly square. A second tie bar is dropped in place over the first one, at right angles to it, to carry over to the next section of upright scaffold for a multiple assembly as shown to the right in the illustration. Casters can be employed under the bottom of each upright to make a portable unit. They are counted as accessories subject to specification. Load is 270 lb. per square foot.

If you write maker identify as IEN - 9886

CLEANING . . Portable vacuum machine, wet or dry operation, rates 3/4 hp.

Source: UNITED FLOOR MACHINE CO.
7711-15 S. Chicago Ave., Chicago 19, Ill.

Rubber tread casters

Uni-Vac Model 901 designates a new portable vacuum cleaner with a tank holding 10 gal. of liquid or 1 3/4 bushel of dry refuse. A multiple stage turbine blower is driven by a 3/4 hp. universal motor on 110 volt input. The blower develops a water lift of 55 inches. The assembly weighs 45 lb. and measures 16½ by 35 inches.

The machine will pick up soap solutions, water, dust, dirt and chips, to leave a clean dry surface. The motor driven blower can be lifted out of its rubber cushioned seat to be used as a separate portable unit. Action can be reversed to provide blowing rather than suction to remove dust and dirt from bins, pipe lines, structures, equipment.

Standard equipment includes a steel floor wand, hose and coupling, tapered blower nozzle, adapter for a utility nozzle, floor nozzle, squeegee nozzle, slide-on brush, utility nozzle.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9887

Investigate LAPPING!
On Metals-Ceramics Quartz and Plastics

Here's What You Can Do With a CRANE LAPMASTER..

With a Lapmaster you can lap different parts in one cycle, lap wide range of parts of different materials in short or moderate production, lap identical parts at tremendous production rates and maintain tolerances to one light band (.0000116"), GET all the facts. Lapping may be the solution to your problem.

Write for free bulletin I.E.N. 52.

JOHN CRANE
CRANE PACKING COMPANY
LAPMASTER DIVISION
1813 CUTLER AVENUE • CHICAGO 13, ILLINOIS

If you write maker identify as IEN - 9888

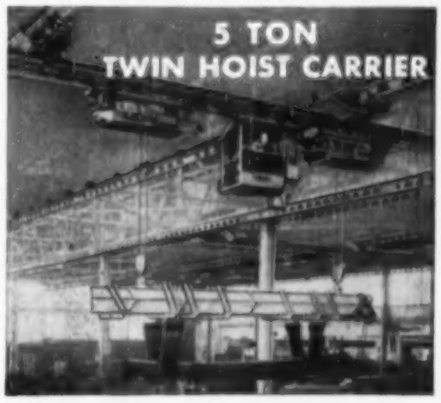
WHEN YOU PICK A PORTABLE POWER TOOL

several factors are important: weight of tool; speed under load; balance; ease of handling; power requirements; cost of maintenance. But most important of all is the *work productivity*. CP SUPER CYCLE ELECTRIC TOOLS have these advantages and 10% to 20% *greater productivity* than any other type of tool. If you can use six or more portable tools in one location, we should like to arrange a Super Cycle demonstration in your own shop. Write for Catalog 905-2.

CHICAGO PNEUMATIC TOOL COMPANY
General Offices 8 East 48th Street, New York 17, N. Y.

PNEUMATIC TOOLS • AIR COMPRESSORS • ELECTRIC TOOLS • DIESEL ENGINES
ROCK DRILLS • HYDRAULIC TOOLS • VACUUM PUMPS • AVIATION ACCESSORIES

If you write maker identify as IEN - 9889



This cab-operated carrier operates on two 4-runway transfer bridges, providing full handling coverage for an area 152' x 380'. It handles 5 tons of tubing up to 40 feet long.

GET THIS BOOK!
BOOK No. 2008
Packed with valuable information

For any handling problem — simple or extensive — check with Cleveland Tramrail.

CLEVELAND TRAMRAIL DIVISION
THE CLEVELAND CRANE & ENGINEERING CO.
4203 East 285th Street, Wickliffe, Ohio

CLEVELAND TRAMRAIL

If you write maker identify as IEN - 9890

SOLD ONLY THROUGH RECOGNIZED WHOLESALERS
made by **OKONITE**

If you write maker identify as IEN - 9891

HAVE YOU TRIED THIS ONE FOR SIZE?

Small or Large — RP Paint Arrestors Economically Solve the Most Difficult Paint Overspray Problems

Here's another example of the flexibility of R P Paint Arrestors—a bench type booth for spraying small articles. This plant has six such units emptying into a common exhaust duct . . . a simple, effective installation at minimum cost.

WRITE FOR FREE BOOKLET

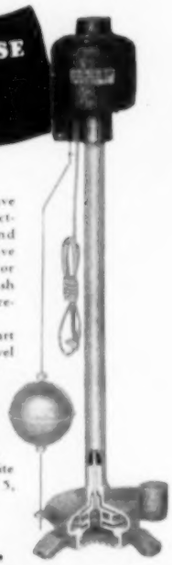
Helpful, informative suggestions to solve your paint spray booth problems. Write today.

RESEARCH PRODUCTS CORPORATION
Dept. IN; Madison 10, Wis.

RP . . . PRODUCTS OF RESEARCH

If you write maker identify as IEN - 9892

FAIRBANKS-MORSE INDUSTRIAL SUMP PUMPS



Handy, dependable. Save thousands of dollars by protecting machinery, merchandise and buildings from damage by excessive seepage and flash floods. Ideal for use in boiler and elevator pits, ash dumps, machinery base pits, storerooms, and many other places.

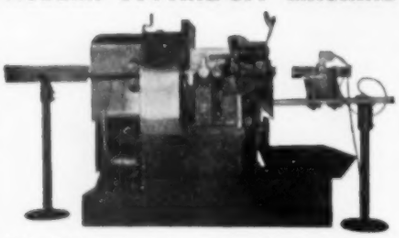
Fairbanks-Morse sump pumps start when water reaches pumping level . . . shut off when danger is passed. Can be left unattended. Made for 2-foot sump pits. Extension columns available when settings require them. For complete details of sizes, construction features, pumping capacities and prices, write Fairbanks, Morse & Co., Chicago 5, Illinois.

FAIRBANKS-MORSE,
a name worth remembering

DIESEL LOCOMOTIVES AND ENGINES • ELECTRICAL MACHINERY • PUMPS
SCALES • HOME WATER SERVICE EQUIP. • RAIL CARS • FARM MACHINERY

If you write maker identify as IEN - 9893

MODERN CUTTING-OFF MACHINE



Cuts off longer pieces than regular automatic machine — any length you want. FAST cutting and chamfering of tubing, pipe, shafting. Check the following figures:

½" Tubing — Cuts and Chamfers both outside edges of ½" .030 wall tubing, 8" lengths, every 2.5 seconds.

1¼" Cold Rolled — Cuts and Chamfers both ends, 20" long, at rate of 1 every 20 seconds.

1" Tubing — Cuts and Chamfers both outside edges, pieces 3" long. One every 3 seconds.

4" THREADED STUDS

These popular time saving machines are now available in A sizes handling work up to 6¼" O.D.

WRITE for CATALOG

Cut and chamfered at one time—in 8 Sec.—from 10 ft. length of stock already threaded (¼" U. S. Standard). Clean cut. Clean chamfer. Nuts start easily, with no extra finishing required.

MODERN MACHINE TOOL CO.
JACKSON MICHIGAN

If you write maker identify as IEN - 9894

PUMP . . Hydraulic piston design, constant displacement, for aircraft

Source: VICKERS INC.
1398 Oakman Blvd., Detroit 32, Mich.

Volumetric efficiency to 96 per cent

Model PFA2, to the left in the illustration, and Models PFA3Y-2 and PFA3Z-2 which are duplicates of each other, are new constant displacement hydraulic pumps developed by the company particularly for aircraft. They are suited for use where a nonpulsating flow of fluid is desired at pressures to 3,000 pounds. Theoretical displacement is 0.333 cu. in. per revolution for Model PFA2. It is 0.507 cu. in. per revolution for the other two. Recommended speed should not exceed 3,900 rpm. for continuous duty.

Mounting is by means of the flange on each of the three designs with connection to the spline shaft extending from the flange face. The pumps conform to AN requirements.

If you write maker identify as IEN - 9895

METER . . Portable instrument reads air velocity, 10 to 5,500 fpm.

Source: HASTINGS INSTRUMENT CO.
Pine Ave. at Super Highway, Hampton 10, Va.

List is $190

Thermopile located in the probe that attaches to this new Model-H Air-Meter is positioned in an air stream to read velocity on the meter. Two velocity ranges are 10 to 750 and 750 to 5,500 fpm. Desired range is selected by turning the same switch that closes the 110-volt ac. input circuit. A second knob is turned to compensate for line voltage variation between 90 and 135 volts.

The meter is accurate within 2 per cent and also is compensated for rate of temperature change. Applications include measuring velocity in wind tunnels, determining ventilation requirements to operate machinery efficiently, measuring effects of ventilation under given conditions. Binding posts are included on the instrument for connection to a recorder operating on 10 millivolts or less.

Identify as IEN - 9896

All of the bounce in every ounce of 700 tons of sugar per hour has been removed in the operation of a continuous bucket conveyor by installation of a Twin Disc hydraulic coupling. The new installation takes hold of a heavy starting load, gets it smoothly into motion, keeps it that way steadily hour after hour. Its 17½-in. coupling and 15-hp. motor replaces the original 20-hp. motor that was continually in trouble.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9897

This new FREE booklet tells how two new types of Oakite-developed solvent detergents make it easier and cheaper for you to do many difficult metal-cleaning jobs. Here are some of the subjects covered in the booklet:

- Cleaning metal between processing operations
- Precleaning before painting or plating
- Stripping paint
- Providing temporary protection against rust
- How to use Oakite solvent detergents:
  - Spray-washing machine method
  - Spray-rinse method
  - Soak-tank method
  - Manual method

FREE For a copy of this 24-page booklet (illustrated with photographs and diagrams), write Oakite Products, Inc., 16A Rector St., New York 6, N. Y.

Technical Service Representatives in Principal Cities of U. S. & Canada

OAKITE SPECIALIZED INDUSTRIAL CLEANING MATERIALS • METHODS • SERVICE

If you write maker identify as IEN - 9898

Your Cylinder's Good Friend... *Ledeen* valves

HAND OPERATED 4-WAY VALVE
Three models: Completely Manual - Spring Return to Neutral - Spring Return to Reverse. Flow cycles to handle most requirements.

FOOT OPERATED 4-WAY VALVE
Same as Hand Operated Valve, except foot operation replaces hand. Leaves hands free for other work.

POWER OPERATED 4-WAY VALVE
For remote control, safety or automatic equipment. Suitable for solenoid, cam, finger, toe or hand operation.
Ledeen valves are built in sizes from ⅛" to 1½" standard pipe tap—to operate air and hydraulic cylinders and motors, single and double acting.

Write for Bulletin 1000

Ledeen Mfg. Co.
1602 San Pedro
Los Angeles 15, Calif.

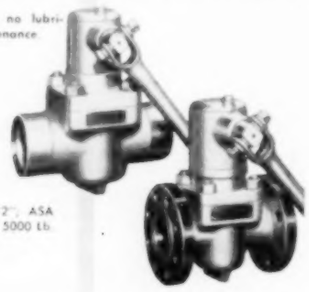
VALVES • CYLINDERS
AIR-HYDRAULIC
PUMPS & BOOSTERS
VALVE ACTUATORS
AIR HOISTS

If you write maker identify as IEN - 9899

Cameron NON-LUBRICATED LIFT-PLUG VALVES

- They seal tightly.
- They open and close with the greatest of ease.
- They require no lubrication maintenance.

a new approach to valve perfection



Sizes: 2" to 12", ASA 300 Lb. Class to 5000 Lb. w.o.g.

CAMERON IRON WORKS, INC.
P. O. BOX 1212 • HOUSTON, TEXAS

If you write maker identify as IEN - 9900

Grease Monkeys have retired —since Transall took over

Pre-Lubricated Belt Conveyor Idlers

No Lubrication Labor
No Lubrication Cost

TRANSALL INC.
Manufacturers of a complete line of Belt Conveyor Equipment
117 North 11th St. Birmingham 4, Ala.

If you write maker identify as IEN - 9901

ANY SURFACE

Your plant and equipment need protection from moisture, acids, corrosion and deterioration to insure economical operation. Ruberoid Rapid Asphalt Paint provides this protection in a hard gloss paint that is easy to apply with brush or spray. Wood, metal, masonry, coated fabrics and other surfaces last far longer when there's an asphalt finish to take wear and abuse. It dries quickly and one application gives lasting service.

Ruberoid Rapid Asphalt Paint is utilized in innumerable equipment, electrical and industrial applications, such as cables, switch boxes, electric motors and generators, boilers and engine rooms, iron grills, fire escapes, damp-proofing concrete, etc. Rapid Asphalt Paint comes in handy drums, barrels and cans in six different sizes from one pint to 55 gallons. For detailed literature, write The Ruberoid Co., 500 Fifth Avenue, New York 36, N. Y.

The RUBEROID Co.

ASPHALT AND ASBESTOS BUILDING MATERIALS

If you write maker identify as IEN - 9902

You change ranges

New!...simplified Recording Potentiometer by WESTON

With this new, simplified WESTON recorder, you make the change simply by inserting the desired range standard, as illustrated above. Not even a soldered connection to break. No change in the universal slide-wire necessary. And reference junction compensation is changed in like manner, when changing type of sensing element.

And there are many more features, electrical and mechanical, that remove the complexities from instrument operations and maintenance. They're all found in this new WESTON Recorder. Ask us to send you all the facts . . . WESTON Electrical Instrument Corporation, 617 Frelinghuysen Ave., Newark 5, N. J. . . . *manufacturers of Weston and Tag instruments.*

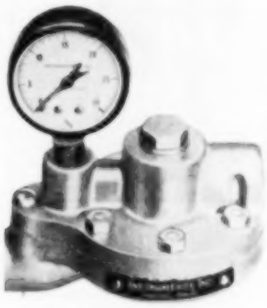
247

WESTON Instruments

If you write maker identify as IEN - 9904

CONTROL . . Pneumatic relay maintains constant air differential

Source: INSTRUMENTS INC.
120-24 N. Madison, Tulsa 3, Okla.



Ask for Bulletin 6000

Constant pressure at a predetermined amount in a Model 6000 or variable amount in a Model 6000-B is maintained on the down-stream side of this new constant differential relay. It is for use in air purging lines and to supply constant differential pressure to operate liquid level and specific gravity indicating and recording instruments. Both models are available in brass or stainless steel and employ Neoprene diaphragms. Each is supplied with a standard mounting bracket.

Air connections are for ¼-in. pipe. Maximum operating temperature is 200 deg. F. Maximum pressure is 600 pounds. Flow rate is to 210 cfh. with supply pressure at 65 pounds.

Supply air enters above the diaphragm at an inlet on the right hand side of the unit as it is shown in the illustration. The air passes downward through a spring backed valve in which one spring is above the valve forcing it toward closed position and a second spring is below the diaphragm to act against the first one. The air enters the chamber above the diaphragm, passes from there to beneath the gage on the left hand side and down through a restriction pin to the instrument outlet on the left and to a tube extending vertically downward into the liquid to be measured.

Differential is controlled by the interchangeable pin. Action of the diaphragm and the two valve springs, with air pressure above and below them, holds the differential steady on changing liquid level or on changing air supply pressure.

Model 6000-B is similar to Model 6000 except that it is equipped with an adjusting screw in place of the interchangeable restriction so it can be set for various differentials.

If you write maker identify as IEN - 9905

CLAMP . . For tool makers opening ranges from ⅝ to 3½ inches

Source: PRECISION T. C. CO.
1303-7 S. Laramie Ave., Dept. 14, Cicero 50, Ill.

Steel jaws and steel screws with integral knurled and drilled heads make up the assembly of this new tool maker's parallel clamp. The upper head, as shown in the illustration, is fitted with a finger that engages a slot in the forward screw head so the upper jaw will not drag on the screw. The parts are hardened and held to precise dimensions.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9906

Because Jewelox Fibre Backed Discs grind better, last longer — they reduce grinding costs to a minimum. Jewelox Fibre Backed Discs will not curl or warp and resin bonding gives them outstanding durability.

Test Jewelox Fibre Backed Discs yourself. Prove to your own satisfaction that they are tops for use on high-speed pneumatic or electric grinders. Order Jewelox Fibre Backed Discs from your distributor or write Abrasive Products, Inc., 541 Pearl St., South Braintree 85, Mass.

SHARPER, TOUGHER

Jewel COATED Abrasives

CUT COSTS!

If you write maker identify as IEN - 9907

ALLIS-CHALMERS PUMPS

NEW FILMS AVAILABLE!

Learn More About Theory . . . Application . . . Installation . . . and Maintenance of Centrifugal Pumps!

FREE! Three 12 to 20 minute sound-slide films are now available for showing to maintenance meetings, plant groups, and engineering societies. Information is practical and instructive. Films have been widely praised by educational and industrial groups since their release a few months ago. Easy-to-operate projector can be furnished. First film is "Theory of Centrifugal Pumps"; second, "Application Engineering"; third, "Installation and Maintenance." Call your nearby Allis-Chalmers distributor or district office now to arrange for showing, or write Allis-Chalmers, Milwaukee 1, Wisconsin. A-2809

ALLIS-CHALMERS A-C

If you write maker identify as IEN - 9908

FREE!

BRAKE & CLUTCH DEMONSTRATION

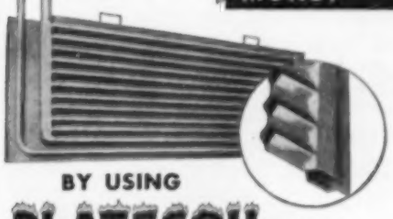
• Start it . . . stop it . . . inch it—test the lightning speed, powerful torque, instant response and sensitive control of the new, compact Warner electric brakes and clutches. If you have a machine starting or stopping problem, a Warner electro-magnetic unit may be the answer that adds materially to the efficiency and overall performance of your equipment. A letter to us, or a call to your Warner representative will bring a *working demonstration*—no cost or obligation, of course.

WARNER

WARNER ELECTRIC BRAKE & CLUTCH CO.
BELOIT, WISCONSIN, U. S. A.

If you write maker identify as IEN - 9909

YOU SAVE STEEL MANHOURS MONEY



BY USING PLATECOIL FOR TANK HEATING AND COOLING

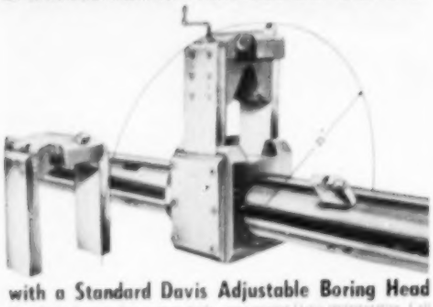
YOU SAVE CRITICAL STEEL because "Platecoils" require less than ½ the steel used in pipe coils of the same surface area. A 22" x 119" Platecoil weighs 95 lbs. against 259 lbs. for an equivalent 2" pipe coil. 144 lbs. steel saved. YOU SAVE CRITICAL MANHOURS because "Platecoils" are easily installed, cleaned or replaced in minutes . . . No down-time . . . No tank dumping. Many manhours saved. YOU SAVE MONEY because "Platecoils" cost up to 50% less in initial cost and require less maintenance. Investigate "Platecoils" today.

Send for complete technical manual and descriptive Bulletin No. P56

PLATECOIL
Division
KOLD-HOLD MFG. CO
LANSING 4, MICHIGAN

If you write maker identify as IEN - 9910

NOW ACCURATELY BORE DIAMETERS FROM 10" TO 50"



with a Standard Davis Adjustable Boring Head

You don't have to buy custom-made heads for your large diameter boring job anymore. Standard Davis Adjustable Heads are accurately adjustable for any size from 10" to 50"—take care of those large miscellaneous jobs on horizontal boring machines.

Super accurate construction assures precise accuracy adjustments to make accurate adjustments on several cuts taken at the same time.

Here you have the most accurate possible in adjustable boring heads—now available as a standard item with your nearest Davis representative. Call him — or write us direct for full information on this versatile attachment.

Davis Stub Boring Tools Speed Up Boring Operations—Available in sets consisting of pilot, cutter bar and boring bar—that are accurate to .0001" for adjustment. Range from 1/2" to 12" in diameter.

DAVIS BORING TOOL DIVISION
GIDDINGS & LEWIS MACHINE TOOL COMPANY • Fond du Lac, Wis.

Manufacturers of Table, Floor and Planer Type Horizontal Boring, Drilling and Milling Machines • Vertical Boring and Turning Mills • Double Housing and Open Side Planers and Planer Type Milling Machines • Complete Tooling Service.

If you write maker identify as IEN - 9911

How To
Mark Name Plates In 1/5 the Time

Cutting costs in these times is a good trick if you can do it. You can, on plates requiring detail marking, by using an Automark Electric Metal-Marking Typewriter. The operator lightly touches the key and the Automark does the rest, quickly and automatically. No dial to turn—no lever to pull. Marking output is increased five times and worker fatigue is greatly reduced. Write today for Bulletin 8-16.

AUTOMARK
Electric Metal-Marking
TYPEWRITER
Manufactured Exclusively By

AGENTS
Desirable territories open for responsible representatives. Write giving complete information, lines carried and territory covered.

DEFIANCE MACHINE & TOOL COMPANY
1926 South Vandeventer Ave. • St. Louis 10, Mo.

If you write maker identify as IEN - 9912

NOW YOU CAN HAVE **TIME** RECORDED

THE NEW *Simplex* TIME RECORDER

• Vertical or Horizontal Print • Two Color Registration • Trigger-touch Print • Direct Subtraction • One-Minute Positioning • Attractive, Indestructible Case • This NEW Simplex Time Recorder figures payrolls easier, 50% faster — cuts payroll costs in half.

ACCURATELY
AUTOMATICALLY
EFFICIENTLY

SIMPLEX TIME RECORDER CO., Gardner, Mass., Dept. 110
Please give us more information on:
☐ Payroll Recorder ☐ Time Cards ☐ Electric Time Stamp
☐ Watchman's Clock ☐ Time Card Files ☐ Time Card Racks
Firm
Name
Street & No.
City State

For Your Special Information

ALL MAKERS ARE LISTED IEN S-29

At the bottom of the editorial columns through each issue of IEN you will see the following two-line statement:

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

This statement is to say that in Thomas' Register, with which Industrial Equipment News is affiliated, you will find complete listings of all products made in these United States. As a product source reference, in which thousands of products are not only listed but also clearly defined, it stands completely alone. No other source-information publication even approaches it.

Many of you know the Register and are using it. We suggest, if you are not, that you check with your purchasing agent. Chances are good you will find it in daily use in his department. If he does not have it you can make reservation now for the 1953 edition to be delivered shortly after the first of the year. List price is $15 plus handling charges.

VOLUNTEER NOW! IEN S-30

A citizen army, two million strong, goes into action in October to insure the Nation's health and welfare for the year to come. Volunteers in a united campaign to raise money for some 17,000 Red Feather services, these men and women will solicit their fellow citizens, and each other, for contributions to home town agencies and national health and welfare programs.

This once-a-year campaign for the Community Chests and the United Defense Fund insures the health and welfare services so vital to everyone. Volunteer your time now to your town's United Red Feather Campaign.

REGISTER IEN S-31

At the top of each page in this issue, at the very top, is an important reminder. Note it if you have not registered for the November voting. Find where you must go and when in order to qualify your choice of our National Leaders for the next four years. Never has it been so important that every American's vote be cast to show the world how free men work to keep themselves that way.

Top Management:
YOUR BOOST
IS NEEDED MOST

If you write maker identify as IEN - 9913

CAN WE SERVE YOU

We make
PRECISION
PAPER PRODUCTS
at a saving to Industry

CONE SHAPES
- SIZES: 1" to 30" lengths
- TAPERS: 45° to 44°
- TOPS: Straight—round—open—closed
- FINISHES: Smooth—rough—ground—flocked

Cones may be impregnated for strength, toughness and waterproofed. They can also be perforated, printed, colored, lacquer tipped, scored, covered with novelty wraps and made with inside liners of cellulose, plastic, glassine, paper. We make cone shaped containers.

SPOOL SHAPES

Paper spools are made any normal size and with varied constructions to include treated fibre heads, various size barrels in length and diameter, with wooden, paper and metal bushings. Single head spools with tapered or flat molded paper base.

Our complete laboratory and engineering service will consider any problem.

SONOCO PRODUCTS COMPANY
HARTSVILLE, S. C. MYSTIC, CONN.

If you write maker identify as IEN - 9914

Full Electric Fork Truck Operation in
6 FOOT AISLES*

The ALL NEW
LEWIS-SHEPARD SPACEMASTER MODEL "M"

*as to the usual Electric Fork Truck case

40% More Storage Space

. . . The "M" uses only 6 feet of this 10 foot aisle, leaving room for an extra row of stacked loads. You get more travel speed with more stability, plus higher lifts at faster speeds than with any similar truck . . . All controls are in the palm of one hand for quicker, safer operation.

Send for new SPACEMASTER Catalog
LEWIS-SHEPARD
1033 Walnut St., Watertown 72, Mass.
Sales-Service in Principal Cities
See "Trucks Industrial" in your Yellow Phone Book

If you write maker identify as IEN - 9915

INCREASE PRODUCTION...eliminate errors...prevent costly accidents ...*in your industrial operations.* Westline pressure-sensitive labels are easy to 'a-ply-dry'... and they stick-and-stay-stuck through heat, cold and humidity. Westline pressure-sensitive markers provide over 12 different solutions to your industrial identification problems. They can be supplied from stock or to your exact specifications in size and marking information. Get the facts on this amazing modern method of industrial marking today!

solved YOUR INDUSTRIAL IDENTIFICATION PROBLEMS!

WIRE
PIPES
FLOW LINES
PARTS-IN-PRODUCTION
INSPECTION
INSTRUCTION
QUICKLY IDENTIFIED
!

WESTLINE *Products*
Division of Western Lithograph Company
600 East Second Street, Los Angeles 54, California
Box 3804, St. Louis 22, Missouri
Write for Folder—Dept. IEN-9

If you write maker identify as IEN - 9916

DETECTO SCALES

There's a precision-accurate Detecto Scale for your specific weighing and counting need. The Detecto helps increase production, yet assures you maximum accuracy by making slightest weight discrepancies immediately visible.

DETECTO-GRAM NEW PACKING SCALE

Another Detecto-Gram Scale for weighing your ingredients accurately. New Model No. 8800 brings to your heavy duty weighing jobs the mechanical accuracy previously found only in small scales. Capacity ¼ ounce to 60 lbs.

Write for Literature

DETECTO SCALES • INC.
MAKERS OF FINE SCALES SINCE 1900
553E PARK AVENUE • BROOKLYN 5, N. Y.
SCALE ENGINEERS IN ALL PRINCIPAL CITIES

If you write maker identify as IEN-9917

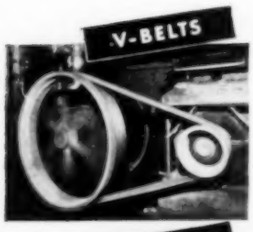
THE new Skinner X5 Solenoid Valve is basically the same as the widely accepted and tested V5, but modified to a construction that is Underwriters' approved for Class I, Group D hazardous locations. Small size and lightweight features are retained, and the X5 is low in price because of the many parts which are interchangeable with other Skinner valves. Rating is 10 watts max.; soft, spring loaded seals prevent leakage; internal parts are stainless steel, wide variety of port locations in 1/8" and 1/4" size, most types available for metering, for AC or DC in a wide range of voltages and frequencies, can be mounted in any position; supplied as two-way normally open or closed, three-way normally open, closed or directional flow. *Write today for details!*

SKINNER ELECTRIC VALVE DIV.
THE SKINNER CHUCK COMPANY
134 Belden Ave., Norwalk, Conn.

If you write maker identify as IEN-9918

A complete line of

V-Belts and V-Belt Drives, Flat Belts and Belting



Whatever your belt drive needs, "U.S." can supply it. With "U.S." distributors and warehouses located across the country, you get immediate shipment.

U. S. Rubber V-belt technicians are specialists in the transmission of power. These service engineers are always ready to see that you get the right belt for the right job. Write to address below.

- U.S. Rainbow Multiple and F.H.P. V-Belts
- U.S. Rainbow Multiple and F.H.P. Sheaves
- Flat Belts and Belting
- Special Purpose Belts

U. S. Rainbow Q. D. Sheaves
in a complete line

Quick-demountable sheaves bring many advantages . . . simplicity . . . inter-changeability . . . lowest cost for flexible inventory. Sheaves and V-belts from the one source guarantee your getting the *right* sheave with the *right* belt.

Products of U.S. RUBBER SERVING THROUGH SCIENCE

UNITED STATES RUBBER COMPANY
Mechanical Goods Division, Rockefeller Center, New York 20, N. Y.

If you write maker identify as IEN-9920

TRUCKS . . Unloader attachment, ram attachment, rotating carriage

Source: TOWMOTOR CORP.
1224-28 E. 152nd St., Cleveland 10, Ohio

Ask for illustrated data sheets

Three attachments have been added to the company's line for application on its fork lift trucks in either permanent or replacement assembly. These include a hydraulically operated push type unloader shown to the left in the illustration, a ram attachment in the center and a revolving carriage to the right. It is not necessary that the forks be completely free from a load in order to back up the truck and leave the load in place. The operator instead can move a control valve so the unloading pusher will move forward as the truck is retracted or while it remains in stationary position.

Open center loads can be handled quickly and safely with the ram attachment which suspends from the fork support bar. Loads can be picked up or deposited at any height within the truck's lift range. The ram is interchangeable with the standard forks.

Solid, liquid or granular bulk materials can be transferred from one container to another by application of the revolving carriage. A container mounted on the forks can be turned 180 deg. in about 5 seconds. The unit operates through a complete circle in either direction by means of its hydraulic motor drive. A valve at the operator's position controls the action.

If you write maker identify as IEN-9921

ELECTRONIC PRODUCT . . Flip-flop unit for use in counting, amplifying control

Source: COMPUTER RESEARCH CORP.
3346-50 W. El Segundo Blvd., Hawthorne, Calif.

Triggers on 8 to 16 volts

Model MC is a new 100-kc. Ferro-Resonant flip flop for use in electronic circuits employed in counting, amplifying and control applications. It is designed to replace vacuum tubes under certain conditions. It will operate on about 10 per cent of the power required by a vacuum tube and can deliver about 90 per cent of the input energy as usable output. There is no problem of heat dissipation and the unit will not wear out or burn out. It is immune to high acceleration and shock. It features high power gain and small size. It is available in an octal plug-in base.

Two outputs, opposite in phase, swing between plus 3 and 21 volts. Both can be made to swing between minus 3 and minus 21 volts by reversing the output rectifier diode. These outputs are capable of delivering 30 milliamperes at 21 volts each with rated frequency at 100,000 pulses per second.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 99

If you write maker identify as IEN-9922

IT'S SAFETY FIRST!

For Man, Machine and Production

with ELASTICONE **GUIDE PIN COVERS**

Protect Pins and Bushings from nicks and scratches . . . prevent injuries to Die Setters and Operators with Elasticone Guide Pin Covers.

Elasticones are manufactured in stock sizes. Specify O.D. of bushing and full open height of set when ordering. Write for full information and literature.

Just Snap Into Place
No Tools Required
No Installation Costs

CENTRAL
2200 EAST HUNTINGDON ST. PHILA. 25, PA.
CENTRAL SAFETY EQUIPMENT COMPANY

If you write maker identify as IEN-9923

Cutaway of Type N Roto-Clone Arrangement E with two impellers.

Collects that Sticky, Linty Dust from Automatic Buffers

Sticky, linty dust from automatic buffing presents no collection problem to the Type N Roto-Clone. The dual impellers of this Hydrostatic Precipitator produce a washing and scrubbing action that results in over 99% cleaning efficiency. Water is recirculated without aid of pumps or nozzles. Collected material is removed as a sludge, eliminating secondary dust problem.

Whether your dust problem involves automatic or pedestal buffing, ask your AAF representative for data on the Type N Roto-Clone or write us direct for Bulletin No. 277.

AAF American Air Filter COMPANY, INC.
335 Central Avenue, Louisville 8, Ky.
American Air Filter of Canada, Ltd., Montreal, P. Q.
Pacific Division Office, San Francisco, California

If you write maker identify as IEN-9924

Triple-action WaterFOG Nozzle controls all kinds of fires

You can take your choice of three different types of fire-fighting action with the remarkable Rockwood SG-48 WaterFOG Nozzle. Discharges (1) high velocity WaterFOG (2) straight stream (3) low velocity WaterFOG from extension applicator. Quickly controls and puts out fires in flammable liquids as well as ordinary combustibles. Uses less water than ordinary nozzles — greatly reduces your fire losses. Plan now to benefit from the SG-48 WaterFOG Nozzle in your fire protection plans. Available in 3/4", 1", 1 1/2", and 2 1/2" fire hose lines. Operates on 50 psi. For complete details write Rockwood Sprinkler Company, 40 Harlow Street, Worcester 5, Mass.

ROCKWOOD SPRINKLER COMPANY
Engineers Water . . . to Cut Fire Losses

If you write maker identify as IEN-9925

If you write maker identify as IEN - 9926

Eliminates Costly Bottlenecks!
BRINGS YOU PLANT-WIDE POWER LUBRICATION

NEW Alemite "POWER-HOUSE" barrel pump

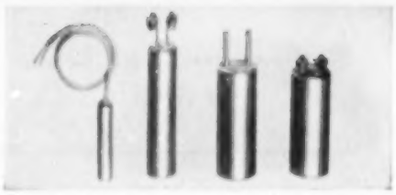
- Dispenses Pressure Gun or Gear Lubricant from original 400 lb. drums
- Pipes direct from pump to point of use
- Serves one or many outlets
- For high or low plant air pressures

Plant Proved! Alemite Standard Duty Barrel Pumps with famous "Atomic" Air Motor. Available in types for pressure gun greases and gear lubricants—in 100 and 400 lb. sizes. Write now for literature giving full data. Alemite, Dept. K-32, 1850 Diversey Parkway, Chicago 14, Illinois.

ALEMITE

If you write maker identify as IEN - 9927

HEAT When and Where You Want It . . .
WATLOW CARTRIDGE UNITS



For a highly concentrated, self-contained mass of heat.

Application—For heating metal parts by insertion into drilled and reamed holes. Sealed ends available, permit use for immersion purposes.
Construction—Nickel chromium resistor is wound on refractory core and embedded in high heat conductivity cement. Brass, steel, monel, or stainless steel sheath.
Terminals—Rigid (several styles and sizes) or flexible (special lugs if desired).
Ratings—Densities 10-15 watts per sq. in.

WRITE for Watlow Electric Heating Units Catalog

WATLOW Since 1922—Designers and Manufacturers of Electric Heating Units
ELECTRIC MFG. CO.
1370 FERGUSON AVE.
SAINT LOUIS 14, MO.

If you write maker identify as IEN - 9928

free! 236-PAGE 1953 ALLIED CATALOG
WORLD'S LARGEST STOCKS OF ELECTRONIC SUPPLIES FOR INDUSTRY

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Send today for ALLIED'S complete, up-to-date 1953 Buying Guide to everything in electronics for industrial application. Rely on ALLIED for the world's largest stocks of special electron tubes, parts, test instruments, tools, amplifiers, intercom and paging systems—complete quality lines of electronic supplies for industry. ALLIED's expert Industrial Division saves you time, effort and money. Send today for your FREE copy of the 1953 ALLIED Catalog—keep it handy for easy reference and ordering.

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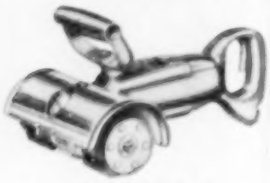
ALLIED RADIO CORP., Dept. 14-J-2
833 W. Jackson Blvd., Chicago 7, Illinois
☐ Send FREE 1953 ALLIED Catalog
Name
Address
City State

ALLIED RADIO
SEND FOR FREE CATALOG

If you write maker identify as IEN - 9929

CLEANING . . Pneumatic rotary tool cuts scale, rust, old paint from metal

Source: AURAND MFG. & EQUIPMENT CO.
2641-45 Colerain Ave., Dept. 16, Cincinnati 14, Ohio



Cutters do the work

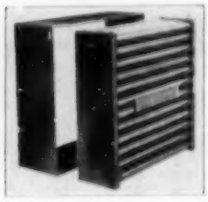
New housing has been designed for its pneumatic tool in the company's line of electric and pneumatic cleaning equipment to remove scale, rust, old paint and any other hard encrusted matter from metal or a surface such as brick, concrete. Two models for pneumatic operation weigh 7 and 15 lb. and operate on air pressure from 70 to 100 pounds. Each tool drives a spindle head on which "bundles" of heat treated tool steel cutters are mounted, one bundle on each side of center. These units can be removed and replaced quickly when the hardened teeth wear out in service.

The pneumatic motor is a rotary design that operates without vibration. Radial blades in the rotor are made of Bakelite. Application can be made in either production or work preparation ahead of painting and finishing or in general maintenance. The tool cannot be overloaded or burned out. A depth shoe can be adjusted to prevent damage to the operating parts.

If you write maker identify as IEN - 9930

DEODORIZING . . Filter panel with activated carbon to purify air

Source: W. B. CONNOR ENGINEERING CORP.
2002 Shelter Rock Lane, Danbury, Conn.



Ask for Bulletin 117-C

Type T-42 Size C is a new heavy duty activated carbon air recovery panel, particularly suited for air conditioning installation in industrial plants. It will remove from a recirculating air stream processing and oil vapor odors as well as odors contributed by workers and finished products. A single panel rates circulation to 700 cfm. Service life depending on the given conditions ranges from about 6 months to 1½ years.

The panel contains 45 lb. of carbon in a ¾-in. bed. Assembly is in a frame measuring 24 by 8¾ by 24 inches. Weight is 92 pounds. The carbon element is formed in accordian pleats inside the frame. Multiple assemblies of frames can be built up to meet given air flow requirements.

Identify as IEN - 9931

Just call the Pennsylvania Railroad if you have something real heavy to transport, as much as 250 ton in one piece. They will send you a new flat car with a low-slung body riding on thirty-two wheels. The body is pivoted on a structure mounted on swivels on two eight-wheel trucks at each end. Overall length is 124 feet.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9932

better paint job with Red Devil Paint Conditioner

Various models provide automatically-timed agitation for ¼ pint to 5 gal. cans. Attachments for round and square containers.

Paint pepped up by Red Devil Paint Conditioners goes on more smoothly, and better protects your product. Patented 3-directional motion (22 shakes per second) puts pigment in perfect suspension—quick!

NOT JUST PAINT

Manufacturers of everything from printers' ink to putty use these machines to mix, blend, and rejuvenate all kinds of high-viscosity and low-viscosity mixtures.

If you have hard-to-mix, or *hard-to-keep-mixed blends*, Red Devil can arrange to have test samples agitated at a nearby location.

Red Devil Catalog No. 21M lists all Red Devil three-way agitators and Red Devil floor maintenance machines. Write Red Devil Tools, 129 Coit Street, Irvington, New Jersey.

Products of Red Devil Tools. 129 COIT ST. IRVINGTON 11, N. J. U. S. A.

If you write maker identify as IEN - 9933

Varglas SILICONE
Electrical Insulating Tubing and Sleeving for wide temperature ranges . . .

Between 85° F below Zero and 500° F above Zero

Owes its amazing temperature range to a combination of *Varglas* and *Silicone*. Resists moisture and oil—flame resistant and self-extinguishing—*Strongest of all accepted insulating materials*. Pioneered by Varflex.

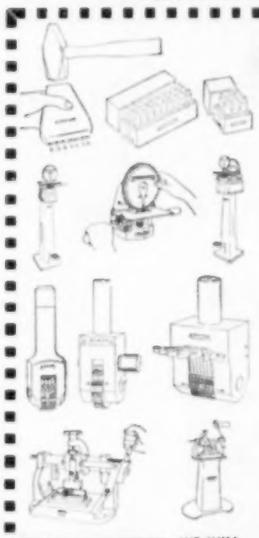
TEST VARGLAS SILICONE IN YOUR PLANT.

Write today for your free folder of working samples.

NEW SLEEVING AND TUBING LINE
Low cost VARFLO for applications that do not have to allow for high operating temperature. Won't fray—takes rough handling without loss of dielectric—won't support combustion (made with Fiberglas braid). Samples and prices on request.

Varflex CORPORATION
306 N. Jay St.
Rome, N. Y.

If you write maker identify as IEN - 9934



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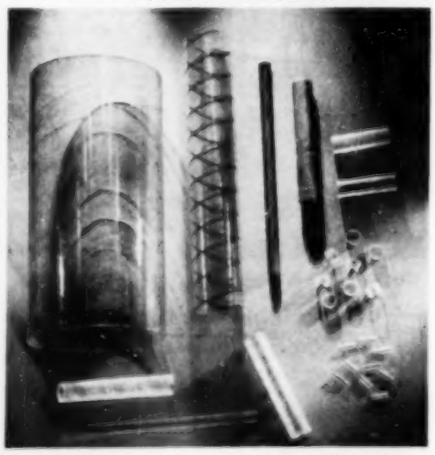
WRITE FOR LATEST LITERATURE & PRICES

CAST BRONZE TABLETS & SIGNS

WE WILL MAKE YOUR PRODUCTS

ACROMARK COMPANY
7 MORRELL ST., ELIZABETH, N. J.

If you write maker identify as IEN - 9935



TUBING . . . to your specifications
POLYSTYRENE • POLY-KRAFT • ACETATE
CELLOPHANE • NYLON • NITRATE • FIBER
. . . of any other material that will best suit your purposes and needs.
Accurately made — held within close tolerances.
We invite your inquiries.

Glassips Inc. Towson 4, Md.

If you write maker identify as IEN - 9936

Write for this bulletin on Naylor Fabrication Service. Along with helpful data on standard fittings for light-weight pipe, it presents special fabrications to save material and labor in piping layouts. Send for your copy today.

Ask for Bulletin No. 525

NAYLOR PIPE COMPANY
1235 East 92nd Street, Chicago 19, Illinois
New York Office: 350 Madison Avenue, New York 17, N.Y.

If you write maker identify as IEN - 9937

first* IN INTERIOR FIRE PROTECTION

ALLENCO

OFFERS

PROMPT DELIVERY
WIDE SELECTION
TOP QUALITY

FIRE EXTINGUISHERS and SUPPLIES

Approved for fires of Class A, A1, B, B1, C, C1—soda-acid, foam, V/L, pump, gas—several sizes and finishes, also cabinets

*Voted 1st by engineers, architects, contractors, distributors; most widely used. Also complete line of hose fittings for all purposes. Write for catalog or consulting service.

Established 1887
W. D. ALLEN Manufacturing Co.
CHICAGO 6 • NEW YORK 7

If you write maker identify as IEN - 9939

PROTECTING . . Safety mirrors for intersections, entrances, exits

Source: LESTER L. BROSSARD CO.
538-42 N. Michigan Ave., Chicago 1, Ill.

So you can see what is coming

Workers are protected against accident at blind corners, cross aisle intersections, entrances and exits by installation of the company's new Klear-Vu safety mirror. It is available in two round convex units measuring 12 and 18 in. and in two flat units measuring 8 by 18 in. and 16 by 24 inches.

Movement of oncoming traffic from around corners is reflected clearly for anyone approaching the dangerous location. A swivel bracket is available to position the mirror at any required angle and at recommended height of 8 to 10 feet.

If you write maker identify as IEN - 9940

CONDUCTOR . . BX armored cable employs glass braid, No. 14 to No. 10

Source: GENERAL ELECTRIC CO.
1283-87 Boston Ave., Bridgeport 2, Conn.

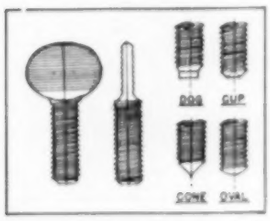
Applies with all standard fittings

Glass braid is now employed in the place of previous cotton braid in the company's recently improved BX armored cable in sizes from No. 14 to No. 10 awg. The braid will not rot and is flame proof. It also makes possible a small overall diameter of the cable easy to handle, to carry and to pull into place. The new design is listed by Underwriter's Laboratories, Inc.

If you write maker identify as IEN - 9941

FASTENING . . Forged thumb screw, No. 6 to 3/8 in., 1/4 to 3 in. thread

Source: MAC LEAN - FOGG LOCK NUT CO.
5533-37 N. Wolcott Ave., Chicago 40, Ill.



Point as specified

New line of cold-forged thumb screws has been added to the company's lines of threaded fastenings. The flattened oval head is integral with the threaded shank and carries serrations on its two flat faces. The smallest unit has a No. 6-32 threaded shank 1/4 in. in length. The largest has a 3/8-in. 16 threaded shank 3 in. in length. Special lengths can be specified. Four point designs are available.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9942

VALVES • DART & PIC UNIONS • TRUCKS • CASTERS

If you write maker identify as IEN - 9943

You get longer-lasting refractory linings with J-M BLAZECRETE

Blazecrete*, Johns-Manville hydraulic setting refractory, is mixed with water like ordinary cement. It builds linings that stand up longer in severe service. They resist spalling, withstand slagging action, and are not harmed by rapid temperature changes.

To meet various operating temperatures and service conditions, there are *three* types of Blazecrete:

3X BLAZECRETE—For temperatures through 3000F. Effective for heavy patching, especially where brickwork is spalled or deeply eroded. Also for building and repairing forge furnace linings, lime kilns, burner blocks.

STANDARD BLAZECRETE—For temperatures through 2400F. For building new and repairing old refractory linings. Used by boiler manufacturers to replace fire clay tile in wall construction.

L W BLAZECRETE—For temperatures through 2000F. An *insulating* refractory . . . light in weight, low in thermal conductivity. For building new linings and repairing old. Adaptable and economical for many other applications.

For further details, send for Brochure RC-28A. Write Johns-Manville, Box 60, New York 16, N.Y. In Canada, 199 Bay Street, Toronto 1, Ontario.

Johns-Manville BLAZECRETE
*Reg. U. S. Pat. Off.
REFRACTORY LININGS

If you write maker identify as IEN - 9944

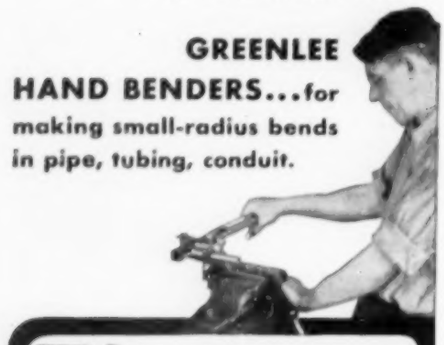
If you write maker identify as IEN - 9945

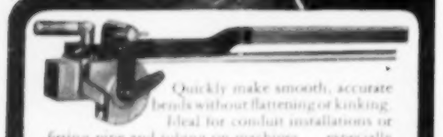
The newest solution to lift problems . . . dependable Roper pumps that are job suited to elevators and similar specialized service. Models rated (based on 300 p.s.i.) from 900 r.p.m. giving 25 g.p.m. (minimum) to 110 g.p.m. using 1800 r.p.m. (maximum). Available with packed box or mechanical seal; with or without relief valve. Send for Bulletin No. 20.

GEO. D. ROPER CORP.
209 Blackhawk Park Ave.
ROCKFORD, ILLINOIS

If you write maker identify as IEN - 9946

GREENLEE HAND BENDERS...for making small-radius bends in pipe, tubing, conduit.





Quickly make smooth, accurate bends without flattening or kinking. Ideal for conduit installations or fitting pipe and tubing on machines . . . especially designed to form neat bends for sharp corners and nooks. Various models and sizes for steel, copper, brass and aluminum tubing or pipe, rigid or thin-wall conduit.

Free Folder and Booklet on the Greenlee Bender line. Write Greenlee Tool Co., 1869 Herbert Avenue, Rockford, Illinois.

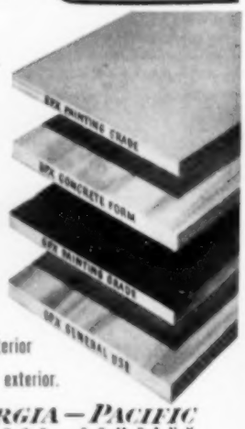
GREENLEE

If you write maker identify as IEN - 9947

WHICH OF THESE GPX (PLASTIC-FACED PLYWOOD) PROPERTIES ARE MOST IMPORTANT TO YOU?

WEATHER RESISTANT . . . unaffected by sun, rain or freezing.
WATER RESISTANT . . . 20 times greater than ordinary plywood.
ABRASION RESISTANT . . . 10 times greater than ordinary plywood dry; 30 times when wet.
CHEMICAL RESISTANT . . . resists hydrocarbons, alcohol, mild acids, organic solvents and acid fumes.
VERMIN RESISTANT . . . termites, marine borers, mold and fungi.
SMOOTH . . . check free.
STRONG . . . plastic surface increases dimensional stability.
EASY TO WORK . . . easy to saw, drill, sand, nail, rivet, glue, paint.
VARIETY OF GRADES . . . four types, five thicknesses, range of overlay weights. Standard 4 x 8 ft. panels, longer lengths on special order.
GPX is top-grade exterior Douglas Fir Plywood surfaced with phenolic resin plastic under heat and pressure.

WHICH OF THESE FOUR GPX GRADES MEET YOUR NEEDS?



White paint grade is for interior use, Brown paint grade for exterior.

GP GEORGIA—PACIFIC PLYWOOD COMPANY
614-9A North Capitol Way, Olympia, Wash.

OFFICES OR WAREHOUSES IN: Augusta, Birmingham, Boston, Chicago, Cleveland, Columbia, Detroit, Lancaster, Louisville, Memphis, Nashville, Newark, New Hyde Park, New Orleans, Olympia, Orlando, Philadelphia, Pittsburgh, Providence, Raleigh, Richmond, Savannah, Vineland.

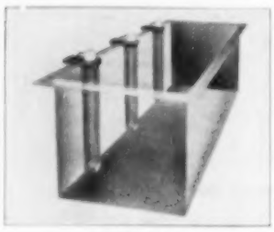
For complete data, fill in and mail this coupon *today*

Georgia-Pacific Plywood Company
Plastic Plywood Division
Marsh Street
Port Newark 5, N. J.
Please send me the GPX Use Folder.
NAME .....
FIRM NAME .....
FIRM ADDRESS .....
CITY ..... STATE .....
POSITION .....

If you write maker identify as IEN - 9949

HEATING . . Electric element for immersion in corrosive solutions

Source: CLEVELAND PROCESS CO.
7014-18 Euclid Ave., Cleveland 3, Ohio



$8 to $60

Nickel alloy wire is embedded in fused quartz and the assembled unit is enclosed in a square perforated guard made of non-corroding metal in this new Glorod electric heating element. It is designed for immersion use in corrosive solutions and is available with four ratings at 2,000 to 6,000 watts in a heavy duty Series G. Overall dimension of the element is 24 to 44 inches. Corresponding minimum immersion depth is 16 to 36 inches. The two smallest units operate on 220-volt single-phase ac. The other two can be specified for 220 or 440-volt ac.

Five additional units, in a Series-L for laboratory use, rate 75 to 1,000 watts. They do not have the protecting metal shield and measure ½ to 1 in. in diameter by 5½ to 13 in. in length for a minimum immersion depth of 2 to 7 inches. Operation is on 110-volt single-phase ac.

If you write maker identify as IEN - 9950

MELTING . . Electric pots and tanks to 450 deg. F., half pint to 120 gal.

Source: ROHNE ELECTRIC MFG. CO.
22 E. Hennepin Ave., Minneapolis 1, Minn.

$11 to $660

Dip coating of parts and tools in liquid plastic for corrosion proofing is one of the applications for which this new line of electrically heated pots and tanks is suited. Thermostat control of the electric heat provides for any temperature between 100 and 450 deg. F. to melt materials such as asphalt, enamel, pastes, putty, paraffine, tars, waxes, as well as the dip coating plastic.

Smallest unit in the line holds ½ pt. and operates on 110 or 220-volt input as specified. Largest of the pots shown in the illustration rates 5 gallons. Stand mounted tanks range from 5 to 120 gal. and are equipped with the stand, a cover, an agitator and quick opening valve. Tank sizes to 20 gal. include Robertshaw-Fulton temperature control and can be specified for 110 or 220-volt operation. Larger sizes are equipped with Minneapolis-Honeywell control and operate on 220-volt input.

Identify as IEN - 9951

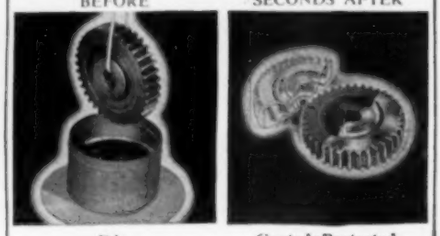
Phoenix Products is the company to look to now if you want one or more of those original Philip Roden electric ovens, IEN-62-52, to store your coated electrodes. DryRod continues to be the trade name.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9952

HOT MELT PLASTIC COATINGS for GEARS • TOOLS • PRECISION PARTS

BEFORE SECONDS AFTER



Dip Coated • Protected

DIP-PAK Protect vital, expensive tools, gears, and machined parts during storage and shipping with Fidelity's durable, transparent plastic coatings. Merely melt coating briquette, dip parts, cool. Lasts indefinitely. Tough; abrasive, moisture, rust resistant. To remove, slit, peel. Re-melt, re-use coating. Economical, practical, rapid. Protect parts; save money.

Write for Bulletins and Free Samples
Fidelity Chemical Products Corp.
470 Frelinghuysen Avenue, Newark 5, N. J.

If you write maker identify as IEN - 9953

FOR *Strictly* IMPERSONAL INSPECTION CHOOSE AMES DIAL COMPARATORS

Ames Dial Comparators make the inspection of duplicate parts an extremely simple, rapid and accurate operation. Ames Comparators are strictly impersonal in their accuracy — the results being in no way dependent on the skill or judgment of the operator. The pressure of the gauging members against the work is mechanically determined and therefore uniform.

Check the Ames Dial Comparators shown — one of them may solve a Quality Control problem for you.

Ames No. 1 is an easily adjustable bench model dial comparator that measures objects up to 1" in cross section. This comparator is designated Ames No. 1W when equipped with a dead-weight and contact to ASTM specifications for measuring resilient materials.

Ames No. 2 is a compact bench model dial comparator for measuring sheet metal, glass, hard rubber. Ames No. 2W is similar, but is furnished with dead-weights and contacts to ASTM specifications for checking textiles, plastics, sheet rubber, etc.

Ames No. 12 features flat ground, cast-iron base of ample size for using V-blocks and locating fixtures. The No. 12 can be fitted with a fine adjustment for close setting. Adjustable bracket holds any Ames Indicator.

Ames No. 130 is designed especially for inspecting comparatively large and odd-shaped parts. For this reason, the flat-ground steel base, the adjustable indicator support, and the upright column are proportioned to the user's requirements.

Send us your Quality Control job specifications, and we will supply complete details and proposal without obligation.

Representatives in principal cities — **B. C. AMES CO.** 16 Ames Street, Waltham 54, Mass.
Mfgr. of Micrometer Dial Gauges • Micrometer Dial Indicators

If you write maker identify as IEN - 9954

LAWSON WOOD SPLIT PULLEYS FOR FLAT BELTS

PROMPTLY AVAILABLE IN ALL SIZES — INCLUDING **EXTRA WIDE FACES** FOR CONVEYOR BELTS

MUCH LOWER COST
LIGHTER WEIGHT
AMPLE STRENGTH
LESS BELT SLIPPAGE

MENASHA WOOD SPLIT PULLEY CO.
MENASHA • WISCONSIN
GET THEM FROM YOUR MILL SUPPLY DEALER OR WRITE US DIRECT

If you write maker identify as IEN - 9955

industrial OIL AND GAS BURNING EQUIPMENT

- Mechanical Atomizing Oil Burners
- Steam Atomizing Oil Burners
- Refractory Burner and Muffle Blocks
- Industrial Gas Burners
- Low Air Pressure Oil Burners
- Fuel Oil Pump Sets
- Valves, Strainers, Furnace Windows
- Tandem Block Combustion Units
- Combination Gas and Oil Burners

Detailed information gladly sent you upon request.

NATIONAL AIROIL BURNER

NATIONAL AIROIL BURNER COMPANY, INC.
1281 EAST SEDGLEY AVENUE, PHILADELPHIA 34, PA.
Southwestern Division: 2512 SOUTH BOULEVARD, HOUSTON 1, TEXAS

If you write maker identify as IEN - 9956

AA-251

Camachine®

SLITTERS AND ROLL WINDERS

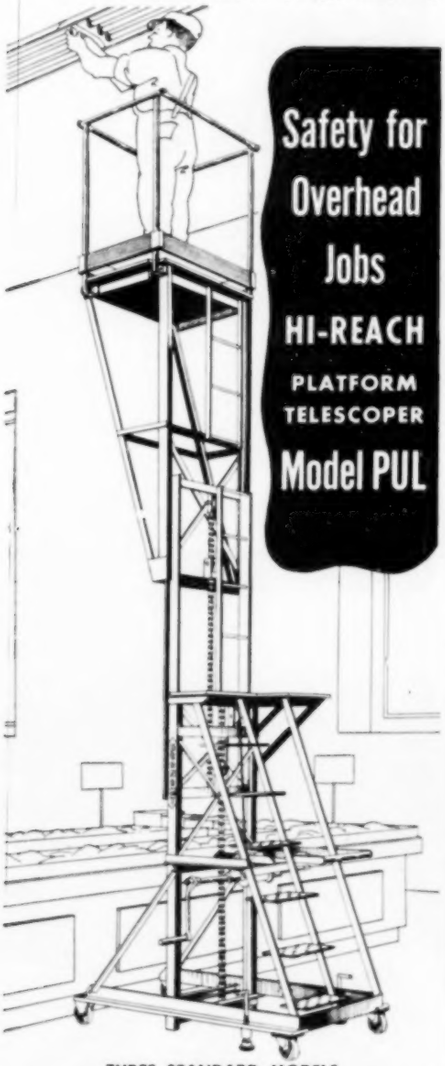
If you want fast, low cost production of top-quality rolls of paper, plastics, textiles, rubber, and other plain, coated, laminated or tacky-surfaced materials . . . it will pay you to investigate Camachines!

26-3A, a popular CAMACHINE featuring differential rewinding and positive roll separation. Rolls produced on the 26-3A are ideal for further processing, or for consumer use.

Bulletin 1010 will be sent on request

Cameron Machine Company • 61 Poplar Street • Brooklyn 2, N. Y.

If you write maker identify as IEN - 9957



Safety for Overhead Jobs

HI-REACH PLATFORM TELESCOPER

Model PUL

THREE STANDARD MODELS

No. 1—Platform lift 10'9"		$305.00
No. 2—Platform lift 11'9"		315.00
No. 3—Platform lift 15'0"		340.00

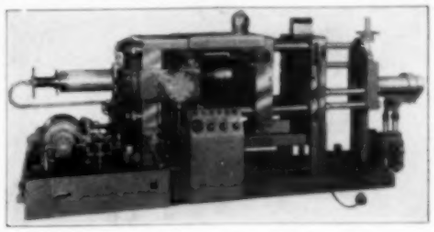
Equipped with 5" diameter base wheels
Rubber-tired wheels $8.00 extra
F.O.B. Chicago
Other models with platform lift up to 95'
Write for complete specifications.

ECONOMY ENGINEERING COMPANY
4502 West Lake Street • Chicago 24, Illinois

If you write maker identify as IEN - 9959

DIE CASTING . . Cold chamber machine for aluminum, brass and magnesium

Source: CUYAHOGA INDUSTRIES
17918-22 Waterloo Road, Cleveland 19, Ohio



Ask for illustrated Wedgelock bulletin

Wedgelock trade names the company's line of die casting machines in which hydraulically operated wedges move in and out laterally to back up the die clamping ram. A small hydraulic cylinder serves to advance and retract the ram and to limit the opening movement. Model A-36-15 is a new machine in the company's line that mounts platens 36 in. in width by 34 in. in height and provides a maximum opening at 15 inches.

A 20-hp. motor and hydraulic pump provide pressure to operate the 6-in. closing cylinder through its 15-in. maximum stroke, the two 18-in. locking cylinders through their 3-in. stroke, the 5-in. injection cylinder through its 14-in. stroke and the 5-in. ejector cylinder through its 5-in. stroke.

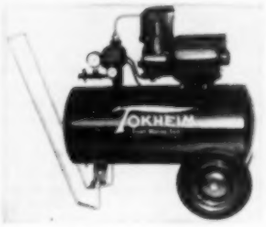
Pressure on the injection cylinder can be adjusted between 1,000 and 2,000 lb. per sq. in. to produce a shot pressure of 20,000 to 40,000 pounds. Locking pressure is 600 ton.

Control centers on a panel at the side of the machine for operation and also for the motor driven adjustment provided at the threaded clamping ram. Safeguards protect the machine and the operator so the injection cylinder cannot be operated unless the dies are closed and in locked position. A timer controls the opening. A foot operated switch actuates the injection cylinder.

If you write maker identify as IEN - 9960

COMPRESSOR . . Portable assembly, tank mounted, 3.5 cfm., 100 pounds

Source: TOKHEIM OIL TANK & PUMP CO.
1654 Wabash St., Fort Wayne 1, Ind.



For utility use

New compressor, single cylinder air-cooled is mounted with its integral ½-hp. motor on a 10-gal. tank with a unit of the company's Select-o-matic pressure control. The tank is equipped with a pair of semi-pneumatic wheels and a combination support and steering handle.

The control permits setting maximum pressure at any point between 60 and 100 lb. with cut-in pressure anywhere from 30 to 50 lb. below the cut-out. The tank is fitted with a drain valve, a manual air outlet valve, and a 100-lb. air gage.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9961

TINNERMAN Speed Nuts

Increase Production... Cut Assembly Costs

Snap into Bolt Receiving Position; Eliminate Welding and Staking!

Combine 2 Fasteners in ONE; Eliminate tapped Plates!

For better fastening methods, do as thousands of industry's leaders have . . . turn to SPEED NUTS, "The Fastest Thing in Fastenings." Above are two of thousands of standard types available to reduce assembly time, cut material costs and save on materials-handling! See your TINNERMAN representative or write direct for details on our FREE Fastening Analysis service for your products!

TINNERMAN PRODUCTS, INC.
Dept. 12, Box 6688, Cleveland 1, Ohio

If you write maker identify as IEN - 9962

Now at New Low Price

T-47 TIME SWITCHES

- **New Low price $11.50***
  (Formerly $13.50)
- **18 month guarantee**
- **Versatile, easy to use**

Contact your nearest G-E sales office, General Electric, Schenectady, N. Y.

*Mfg. suggested retail price. 805-133

GENERAL ELECTRIC

If you write maker identify as IEN - 9963

After extensive tests—
Leading Heating Control Manufacturer Adopts Millers Falls Electric Drivers For All Precision Assembly Lines

The Problem: Assembling delicate, complex electronic controls quickly and economically with extremely accurate torque maintained at all points.

Solution: Demonstrations and tests runs proved Millers Falls Screw Drivers and Nut Setters, with the patented "Adjustomatic" Clutch so superior for this difficult assignment that they have been adopted as standard. Approximately 100 are currently in use, and the company reports . . . very materially increased production and reduced costs.

Speed, Economy, Precision, Dependability
Whatever the job, there's a Millers Falls Driver ready to save you time and money. Write for full details.

MILLERS FALLS COMPANY
Dept. P, Greenfield, Mass., U.S.A.

MILLERS FALLS TOOLS
SINCE 1868
The Mark of Superiority

If you write maker identify as IEN - 9964

KOHLER ENGINES

4-Cycle Air-Cooled

Kohler Engines provide reliable power for a wide range of uses. Compact, quick-starting. Engineered and built to the high standards that have won world-wide acceptance for Kohler Electric Plants in construction and other industries. The Kohler mark has been identified with quality products for over three-quarters of a century. Write for information on distributor's sales franchise.

Kohler Co., Kohler, Wisconsin. Established 1873

KOHLER OF KOHLER

PLUMBING FIXTURES • HEATING EQUIPMENT • ELECTRIC PLANTS
AIR-COOLED ENGINES • PRECISION CONTROLS

If you write maker identify as IEN - 9965

COMPLETE EASE OF OPERATION in a controller

Any control action easily reproduced.

The Bristol Series 500 Air-Operated Controller permits you to do it by *merely setting a dial!*

This saves hours of shutdown.

Easier to service, too. Simple design, fewest parts, close-tolerance manufacturing—make the instrument interchangeable throughout. One simple adjustment puts it back in exact calibration after complete disassembly and reassembly.

Five types for controlling temperature, flow, pressure, liquid level, humidity, pH. Write for Bulletin 120. THE BRISTOL COMPANY, 107 Bristol Road, Waterbury 20, Conn.

BRISTOL

AUTOMATIC CONTROLLING, RECORDING AND TELEMETERING INSTRUMENTS

If you write maker identify as IEN - 9966

How to CUT AND STRIP INSULATED WIRE... *as fast as 3,000 lengths per hour!*

ARTOS *Automatic* MACHINES REDUCE TIME AND COST

For quantity production of finished wire leads . . . measured, cut to length, and stripped at one or both ends . . . investigate Artos Automatic Machines.

MODEL CS-6E CAPACITY

The Model CS-6 illustrated can complete up to 3,000 pieces per hour in 15-in. lengths, and other lengths in proportion. You save through combined operations . . . through quick, easy set-up . . . through unskilled help who can handle this machine. You obtain substantial time savings over the best manual or semi-automatic methods.

FINISHED PIECES PER HOUR—15 in. lengths, 3000 per hour; 97 in. lengths, 500 per hour. MAXIMUM STRIPPING LENGTH—1½ in. at each end. MAXIMUM CUTTING LENGTH—97 in. MINIMUM CUTTING LENGTH—2 in. (1¾ in. stripped). WIRE HANDLED—Solid or stranded single conductor wires, parallel cord, twister cord, service cord, etc. MAXIMUM WIRE SIZE—No. 10 stranded or No. 12 solid.

Highly accurate machine operation reduces work spoilage to an absolute minimum—errors due to the human element are eliminated. There is no cutting of strands or nicking of solid wire. Uniform lengths and uniform stripping are produced consistently.

WRITE FOR BULLETIN

Get the complete story—write now for Bulletin 35-C on Artos Model CS-6 machines.

Automatic Wire Cutting and Stripping

ARTOS ENGINEERING CO.

2749 S. 28th St. • Milwaukee 46, Wis.

If you write maker identify as IEN - 9967

HIGH PRECISION

Thermistors

from a high precision source

made to your order for resistance values • size • temperature coefficient • mountings • quality

Widely useful as temperature measuring elements and as liquid level sensors, these temperature responsive resistors are built by Bendix Friez under a system of quality controls set up to meet exacting military standards of accuracy. You can count on them as the very best obtainable, whether purchased from stock or made to your own specification. Ask for a list of applications.

Typical application in capsule form for temperature sensing of hydraulic oil.

STANDARD TYPES IMMEDIATELY AVAILABLE

Size (inches)	@ +30°C	@ 0°C	@ −30°C
.140 x .14	43 ohms	86 ohms	194 ohms
.040 x 1.5	12,250 ohms	26,200 ohms	65,340 ohms
.018 x 1.5	35,000 ohms	82,290 ohms	229,600 ohms

Write for details to Dept. H

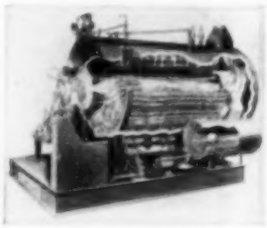
FRIEZ INSTRUMENT DIVISION of 1334 Taylor Avenue • Baltimore 4, Maryland

Export Sales: Bendix International Division, 72 Fifth Ave., N.Y. 11, N.Y.

If you write maker identify as IEN - 9968

BOILER . . Self-contained design, 15 to 500 bhp., pressure to 250 pounds

Source: ORR & SEMBOWER INC.
860 Morgantown Road, Reading, Pa.



Ask for Bulletin 1218

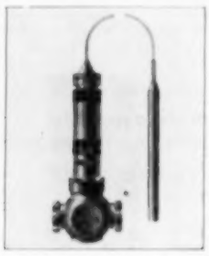
Powermaster trade names the company's self-contained boiler in which a lead-sulphide flame detecting cell is now employed. It combines the functions of the previous flame rod for the ignition flame circuit and separate photo-electric cell for the main flame. The three-pass internal furnace construction remains the same as in previous design. The complete assembly is available with burners to handle light oil, heavy oil, commercial gas fuels as well as to operate with dual gas-oil burners on loads between 30 and 100 per cent of load rating.

Sixteen sizes in the line rate 15 to 500 bhp. with pressure to 250 pounds. Products of combustion travel through the central combustion tube, reverse their flow back through the lower bank of tubes, then return toward the rear through two lateral tube banks.

If you write maker identify as IEN - 9969

VALVE . . Bellows operated throttles flow for temperature control

Source: FARRIS-STACON CORP.
550 Commercial Ave., Palisade Park, N. J.



Adjusts at body ring

Series V is new design in the company's line of temperature control valves, previously described IEN-2374-52, in which liquid expansion in a temperature sensitive bulb is employed to act upon a bellows. This holds the valve in adjustable throttling position for heating or cooling action to maintain a desired temperature. The bulb connects through an 8-ft. length of nickel plated copper capillary tube. The bulb itself is made of nickel plated brass.

Sizes range from ¼ to 4 in. for temperature between 25 and 275 deg. F. with a 50 deg. F. range of adjustment. Inlet pressure is to 125 lb. and inlet temperature is to 450 deg. F. The bronze body is equipped with renewable bronze or stainless steel seat and disc.

Identify as IEN - 9970

Improved education is on the way for engineering students interested in the ins and outs of materials handling. New committee has been formed in the Material Handling Institute to develop information and make it available to the colleges and other study groups, to stimulate teaching on the subject, to find from industry the skills it requires.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9971

PREVENT THREADED CONNECTION LEAKS WITH WECO *Hi-Speed* SEAL

• You'll never have leaking pipe thread connections when you make them up with WECO HI-SPEED SEAL. Quickly and easily applied, HI-SPEED SEAL forms a leak-proof coating on the threads that positively prevents leaking.

HI-SPEED SEAL is a non-hardening compound that requires no thinner . . . is not affected by hot or cold weather and seals with less torque. Make all of your piping connections leak-proof by making them up with WECO HI-SPEED SEAL.

Ask your WECO or CHIKSAN Representative or write for latest bulletins.

WELL EQUIPMENT MFG. CORP.

HOUSTON 1, TEXAS

Exclusive Sales Representative: Chikson Self-Contained Area: CHIKSAN COMPANY

Dallas, Calif. Chicago 3, Ill. Newark 3, N.J.

Export Sales: CHIKSAN EXPORT COMPANY Dallas, Calif. Newark 3, N.J.

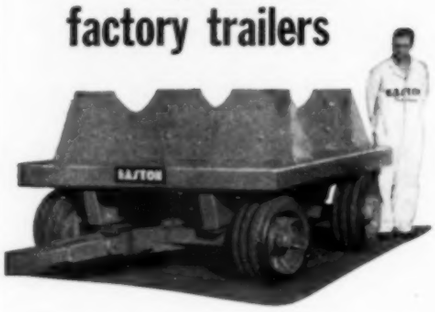
Manufacturers and Distributors of Oilfield, Refining, Marine and Industrial Equipment

If you write maker identify as IEN - 9972

A-1050

EASTON

heavy-duty dependability in yard and factory trailers



EASTON CAR & CONSTRUCTION CO. • EASTON, PA.

NEW YORK • PHILADELPHIA • PITTSBURGH

If you write maker identify as IEN - 9973

Hoist Away!

Portable pulling power . . . on the spot. Just plug in this powerful STAMPCO TUGGER wherever an electrical outlet is handy. The TUGGER'S high-torque hoisting motor delivers plenty of power to the drum . . . instantly . . . through a series of precision gears running in a continuous bath of oil.

Drum is reversed, *electrically*, at the flick of a finger. Furnished with either mechanical brake and switch control, or magnetic-type electric brake for remote control stations.

If you are "man handling" those back-breaking lifting and pulling jobs in your plant, remember this—ONE MAN—ONE HAND—ONE FINGER—operates the TUGGER. Reduces labor costs and accidents. A self-liquidating investment. *Write for free Catalog Bulletin today!*

ST. ANTHONY MACHINE PRODUCTS CO.

2446 East Franklin Ave. • Minneapolis 6, Minn

If you write maker identify as IEN - 9974

RED-E CENTERS . . . . TURN THE WORLD

RED-E

YOUR ONE SOURCE FOR ALL CENTERS

World famous RED-E makes every conceivable type Center in taper and size to fit every application, both standard and special.

for Lathes, Grinders, Milling, Spinning, Gear Cutting, and Railroads.

Write for your Center Information

READY TOOL COMPANY

CENTER Specialists Since 1908

544 Ironstan Ave. Bridgeport 5, Conn.

If you write maker identify as IEN - 9975

Speed Production...Save Money with

WEBBER

TRADE MARK REGISTERED

INDUSTRIAL FREEZERS

Webber Industrial Freezers can save you time and money on the following operations:

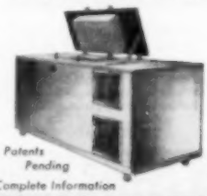
- In the Shrink Fit of Metals for Production and Assembly
- For Stabilization of Metals for Tool and Fixture Manufacturers
- For Metal Hardening—For greater tool life and accuracy
- For Storage and Testing of Materials at Extremely Low Temperatures
- For Chemical Curing, Ageing and Processing
- Eliminates Dry Ice Applications and Overhead
- Amortizes itself in less than one year
- Performs Low Temperature Services with Greater Dependability and Accuracy to Temperatures as Low as —165° below zero.

Cut your operating costs, Improve Quality and Production, Save Valuable Tools, and Improve Testing Methods with Webber Industrial Freezers

36 Standard Models... or Built to Your Specifications ...at No Additional Cost.

A Freezer for Every Need

REPRESENTATIVES IN MOST CITIES



Patents Pending

Write for More Complete Information

INDUSTRIAL FREEZER DIVISION

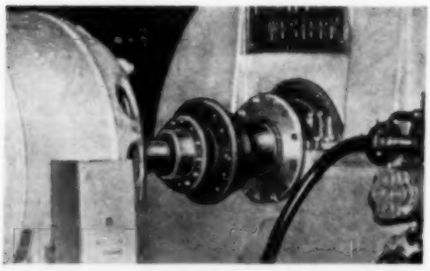
WEBBER APPLIANCE CO., INC.

8-2748 MADISON AVENUE • INDIANAPOLIS 3, INDIANA

If you write maker identify as IEN - 9976

YOUR BEST INSURANCE AGAINST

Coupling Failure



WALDRON

Improved GEAR TYPE

Couplings

The newest development in gear coupling design. Actually built to eliminate common causes of coupling failures. Construction features that definitely improve operation and greatly increase service life. Among many WALDRON refinements are:

- *Forged Steel parts for safer operation at high speeds.*
- *One piece cover sleeve to insure accurate sleeve gear.*
- *Lubricant hermetically sealed against oxidation.*
- *No chance of wear from metal-to-metal contact.*
- *Changes in standard basic design can be made for special applications.*

Write for descriptive Catalog No. 57 for detailed information.

JOHN WALDRON CORP.

NEW BRUNSWICK NEW JERSEY

Sales Representatives in Principal Cities

If you write maker identify as IEN - 9978

DRILLING . . Precision machine to drill pattern of holes in a sheet

Source: WALES-STRIPPIT CORP.
361 Payne Ave., North Tonawanda, N. Y.

Functions as Jig Borer

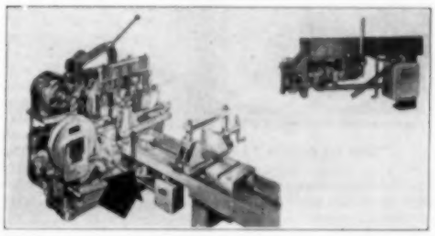
DeLuxe Model has been added to the company's precision drilling machine, previously described IEN-6521-51. Purpose of the new machine, the same as the original one, is to produce an accurate pattern of holes in a work sheet or plate positioned on the table by operating work and spindle positioning controls and by feeding the drill spindle downward. The work rides under a bridge on which the drill head slides. It is secured to a slide rail at right angles with the bridge. The work is supported on inset balls in the table surface.

The new machine permits boring holes to 5 in. in diameter and, as in the original design, it takes work to any length and to 36 in. in width. Scales are mounted for both the work slide and the head movement. Dial indicators and measuring rods provide for final positioning on both adjustments to tolerances within 0.0001 inch. Air operated clamps lock both the head and the slide rail in exact position when the operator is ready to drill or bore or ream.

If you write maker identify as IEN - 9979

SAWING . . Automatic hack saw feeds and clamps the work by power

Source: PEERLESS MACHINE CO.
1602 Junction Ave., Racine, Wis.



The clutch is chain connected

New design of the company's automatic hack saw machine centers in an electrically operated magnetic clutch. This clutch engages the feed drive to advance the work against a length gage at which point it switches over to close the power operated vise and start the sawing operation. When the blade has moved down through the work and then reversed to its top position the clutch re-engages to open the vise and the cycle repeats until the stock has been used up.

The assembly is available with the company's machines rating 7 by 7 in. and 11 by 11 in. in work capacity. The feed assembly can be supplied in 12, 16 and 20-ft. lengths for feed increments between ⅛ in. and either 24 or 48 inches.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80

If you write maker identify as IEN - 9980

GRINDING TIME HAS BEEN REDUCED AS MUCH AS 50% WITH ROBERTSON COOL-CUT WHEELS

The record of Robertson Wheels has been outstanding. Users in hundreds of plants, performing many different operations, report that these unique open structure wheels reduce grinding time 50% or more; increase production as much as 5 times per wheel-dressing; provide longer wheel life than conventional close-grained wheels.

For proof that Robertson Wheels take the toughest jobs in their stride, *blueprint* your grinding problem and let us recommend the proper wheel for your job. You'll like the results you get with Cool-Cut Wheels.

ROBERTSON MANUFACTURING COMPANY

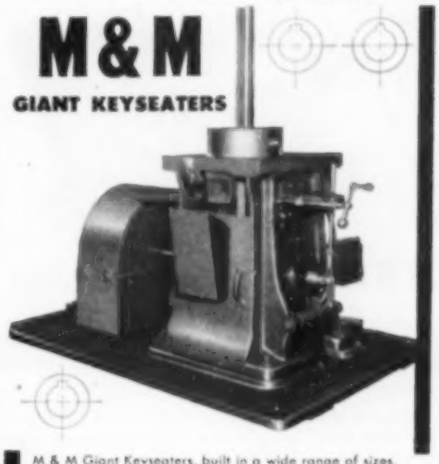
TRENTON 5, NEW JERSEY

Resin Bonded and Vitrified Bonded Grinding Wheels • Mounted Wheels • Segments

If you write maker identify as IEN - 9981

M&M

GIANT KEYSEATERS



M & M Giant Keyseaters, built in a wide range of sizes, speedily and accurately cut internal keyways or splines in the bores of pulleys, gears, fly wheels or any other machine part. Special fixtures and cutters are available for unusual shaped keyways and taper work. Send us your problems today.

MITTS & MERRILL 65

1014 South Water • SAGINAW, MICH.

If you write maker identify as IEN - 9982

Here's a small, sturdy new air regulator that keeps line pressures dependably accurate — at a surprisingly low cost.

It has large capacity at all pressure settings. Responds instantly to increases in demand with minimum pressure drop.

Compact, it requires little space and is easy to install. Servicing may be done with valve in the line.

Initial pressures up to 250 lbs. reduced to any pressure between 5-60 lbs.; 60-100 lbs. Sizes ¼" to ½" with brass body. 2½" gauge included.

See your Mason-Neilan Industrial Distributor

MASON-NEILAN REGULATOR CO.

1188 ADAMS STREET, BOSTON 24, MASS., U. S. A.

If you write maker identify as IEN - 9983

an ACCO product

Army Type WRIGHT SAFEWAY

A steel hand hoist with compact, adjustable suspension and trolley to fit various width I-beams. Designed for low overhead. Easily converted to 2-wheel geared trolley unit. Long-life features mean low-cost service.

See your WRIGHT Hoist distributor or write for Bulletin DH-269 today.

2-wheel GEARED TROLLEY ASSEMBLY

ACCO

WRIGHT HOIST DIVISION
AMERICAN CHAIN & CABLE

WRIGHT Hoists Trolleys Cranes

If you write maker identify as IEN - 9984

S.S.WHITE Elastoplastic
PLUGS and CAPS

Slipped into or over the ends of plain tubing, these plugs and caps protect the ends and keep out dirt and moisture.

Made of flexible Vinylite plastic, they are resistant to most oils, offer high electrical insulation, and are easily applied and stay put. For details

WRITE FOR BULLETIN P-5107

THE S.S.White PLASTICS DIVISION
DENTAL MFG. CO. Dept 147 10 East 40th St NEW YORK 16, N. Y.

WESTERN DISTRICT OFFICE: Times Building, Long Beach, Calif.

If you write maker identify as IEN - 9985

If you write maker identify as IEN - 9986

TEMPILSTIKS°

If you write maker identify as IEN - 9987

LATHE TOOL . . Carbide bit holder clamps bit and breaker adjustably

Source: DETROIT MILLING CUTTER CO.
28620 Grand River Ave., Farmington, Mich.

$46 to $58 complete

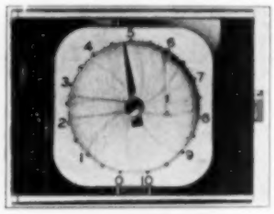
A flat bit measuring 0.875 in. along its parallel sides by 0.190 in. in thickness can be positioned adjustably under the clamp in this new Futurblade holder to present any one of 8 cutting edges at a desired angle. Above the bit the holder takes a separate chip breaker which also can be positioned adjustably with relation to the holder and to the bit. Seven sizes are available for right hand and left hand operation. They have shanks measuring 1 by 1 in. to 2 by 2 in. and are 8 and 10 in. in overall length.

Set up can be made for straight turning with the chip breaker parallel and the cutting blade adjusted to a desired lead angle, for straight facing with the chip breaker adjusted to front position, for operations with the chip breaker set at an angle and for turning and facing into an angular shoulder in which case the blade is supplied as a parallelogram with 10 deg. clearance.

If you write maker identify as IEN - 9988

RECORDING . . Electronic instrument also controls any process variable

Source: BRISTOL CO.
Griggs & Kelsey Sts., Waterbury 20, Conn.



Ask for Bulletin P1245

The company announces addition of a round chart recorder and controller to its line of electronic Dynamaster potentiometers and bridge instruments. The new unit drives a 12-in. chart and also indicates on a circular scale that can be read at some distance. The round chart assembly has the same design and employs the same electronic components as the previously developed strip chart Dynamaster to provide complete interchangeability in the field.

The recording mechanism is on the front of a hinged aluminum panel that can be swung out for access to the interior. The housing that encloses the equipment in operating position excludes moisture, fumes and dust. It is available for wall, flush panel or front of panel mounting.

Identify as IEN - 9989

Friction has been eliminated from the manometer element employed in a flow meter by using Superior stainless tube in both manometer legs. The low pressure leg is made in removable arrangement so different sizes can be employed to meet given capacity requirements.

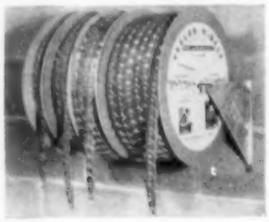
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9990

What do you do when it takes hours . . . sometimes days . . . to change v-belts?

1. Put one or several maintenance men on the job . . . and pay for repairs while production stands still.
2. Pay overtime . . . and have repair costs eat away your profits.
3. Standardize on VEELOS

. . . and change belts in up to 1/10th the time . . . saving labor, saving time and overtime. You get peak operating efficiency plus a saving on inventory. Any length v-belt can be made up from a 100-foot reel of Veelos.



Write for free VEELOS DATA BOOK which includes details on construction, installation and use of Veelos.

VEELOS THE LINE V-BELT

MANNEIM MANUFACTURING & BELTING CO.
651 Maubel Street, Manheim, Pa.
Adjustable to Any Length • Adaptable to Any Drive

If you write maker identify as IEN - 9991

On any steel blackening problem

DEPEND on DU-LITE for a Superior Finish

Courtesy The Pyle Choke Co.

Here's an example . . .

Du-Lite gave this part with its complicated knurls, slots, threads, etc. a fine rust-resistant durable black finish. It is typical of many other parts, small and large, which have been black oxidized by Du-Lite for many years. Moreover, Du-Lite meets most individual and government specifications including 57-0-2C for Type III Black Oxide finish.

What's YOUR problem?

Du-Lite installations are simple, compact, easy to operate. Du-Lite equipment can be tailored to fit production requirements on all types of jobs with a maximum of speed and economy. Du-Lite also makes a complete line of cleaners, strippers, wetting agents, passivating agents, rust preventatives, burnishing compounds, etc. for any metal finishing application.

See your nearest Du-Lite Field Engineer or write for more information.

Du-Lite DU-LITE CHEMICAL CORP. MIDDLETOWN • CONN.
METAL FINISHING SPECIALISTS

If you write maker identify as IEN - 9992

RELAX YOUR BELT TENSION

CLING-SURFACE

MAKES BELTS
1. WORK BETTER
2. LAST LONGER
3. SAVE POWER

Cling-Surface adds "grip" to your transmission belts, stops slipping and permits trouble-free, economical, "slack belt" operation as shown above.

Tight belts stretch under constant tension and require frequent "take ups"; they increase the friction load, waste up to 50% of your power and needlessly strain your bearings and shafting.

Easy-to-apply, Cling-Surface is the ONLY belt preservative that meets U. S. Government requirements and is the ONLY brand that DARES to recommend "slack belt" operation. GIVE IT A TRIAL AT NO RISK. Any belt properly treated with Cling-Surface may be operated "slack". If you don't agree that this method practically eliminates down time for belt repairs, makes your belts, bearings and shafting last longer and delivers more power to your machines, we'll GIVE YOU BACK YOUR MONEY. We've been making this offer since 1896! Ask your mill supply man or,

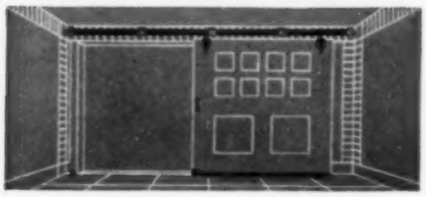
SEND FOR THIS FREE BOOK ▶
"The Truth about all Belt Dressings"

CLING-SURFACE CO. 1068 NIAGARA STREET BUFFALO 13, NEW YORK

If you write maker identify as IEN - 9994

COBURN

SLIDING DOOR HARDWARE



. . . LOW INSTALLATION COST
. . . SMOOTH, EASY OPERATION
. . . LONG, TROUBLE-FREE LIFE
. . . ADAPTABLE FOR BOTH NEW AND REMODELING JOBS

Sliding door hardware for industrial applications of all types: Straight-sliding, sliding-folding, around-the-corner, roundhouse and fire doors.

For additional information write to Sales & Engineering, 56 Sterling St., Clinton, Mass. or consult your classified telephone directory.

THE COLORADO FUEL & IRON CORPORATION—Denver, Colorado
THE CALIFORNIA WIRE CLOTH CORPORATION—Oakland, California
WICKWIRE SPENCER STEEL DIVISION—Clinton, Massachusetts

COBURN PRODUCTS
PRODUCT OF WICKWIRE SPENCER STEEL DIVISION
THE COLORADO FUEL & IRON CORPORATION

If you write maker identify as IEN - 9995

Build Your Own

TERMINAL STRIPS

with the

HUNTER ADD-A-UNIT

The Hunter ADD-A-UNIT consists of vitrified porcelain blocks with binding screws, insulating dividers and metal end pieces, all held together by two through studs.

You can make a terminal strip in any multiple desired by adding blocks and dividers as shown in the illustration. Individual blocks measure 2½ by 9/16 in. by 7/8 in. in thickness. A single-unit assembly with the end pieces is 1½ in. in thickness.

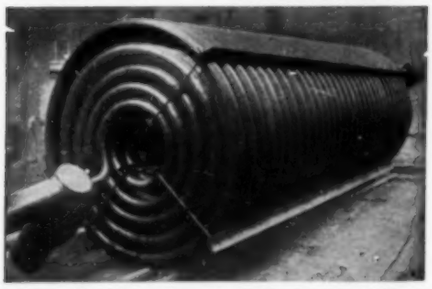
Binding screws take No. 10 to No. 14 wire. The porcelain will not carbonize.

Write for prices

H. F. HUNTER SALES
Hunter Bldg., 311 Cypress Way
PITTSBURGH 28, PA.

If you write maker identify as IEN - 9996

PITTSBURGH
a air p pressure t tested COILS



Pipe Coils—Bends—Boiler Tubes

Built for your particular needs. Send blue print or rough sketch for Pittsburgh quotation. Also air-pressure tested Welded Headers, Welded Ammonia Receivers, Accumulators, Pipe Coils, Bends, Boiler Tubes. "Let us quote!"

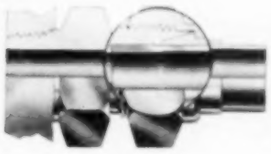
Ask for Pipe Coil Data Book

Pittsburgh Pipe Coil & Bending Company
Division of Pittsburgh Standard Conduit Co.
61 BRIDGE STREET ETNA, PITTSBURGH 24, PA.

If you write maker identify as IEN - 9997

TUBE FITTING . . Wedge connector for aluminum tube, sizes 1/8 to 1 inch

Source: OXFORD FITTINGS INC.
P. O. Box 151, Birmingham, Mich.



60 cents to $3

Tight connection that will not leak and that develops the strength of the tube is made by inserting a tube into the collet that forms a part of this new fitting and by tightening the collet nut with a wrench. The tightening action compresses the collet into the tube wall and displaces tube metal forward to completely fill the space ahead of the collet position. A completed joint can be disconnected and reconnected many times with no danger of leakage of air, gas or liquid. No cracking strain is put upon the aluminum tube since it is not flared by the compressing action. The fitting is particularly suited for Alcoa Utilitube.

If you write maker identify as IEN - 9998

FILES . . Resharpening service returns worn files to working condition

Source: WHARTON FILE CO.
232-36 W. Central Ave., Wharton, N. J.

Sample file no charge

The company announces completion of its new file resharpening plant and invites you to collect your old files and send them to be resharpened so you can put them back into useful service. Standard charge is 2½ cents per linear inch. The company pays shipping charges one way on shipments in excess of 150 pounds.

If you write maker identify as IEN - 9999

HEATING . . Acetylene torch for soldering and general utility uses

Source: VELOCITY POWER TOOL CO.
7503-7 Thomas Blvd., Pittsburgh 8, Pa.

Supplies local heat

Torch-O-Matic is a pistol type trigger operated torch that connects to a source for acetylene gas under pressure. Depressing the spring loaded trigger simultaneously opens the gas valve and actuates an ignition flint to spark the gas into flame. The trigger can be locked open for continuous operation.

The torch is provided with a pressure regulator, a Type-MC or Type-B tank coupling, tank and operating pressure gages, hose and hose clamps, lighting flints, combustion tubes and nozzles and extension tips. The combustion tubes are available in 1/8, 3/16 and 1/4-in. sizes.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10000

"Solved our marking problem!" say users everywhere

"The *MULTISTAMP* Hand Stamp Stencil Duplicator is the best thing we've seen for shipping tag and label addressing" . . . "for marking boxes, cartons, packages." Quick, clean, accurate, easy-to-use. Prints 1000 or more clear, sharp copies from one *stencil* . . *one inking*. Just type, write, trace or draw on low-cost stencil, snap in position and print . . like using a rubber stamp. Non-mechanical, of non-corrosive metal. No moving parts, has replaceable ink pads. 8 complete outfits, $9.50 to $99.50.

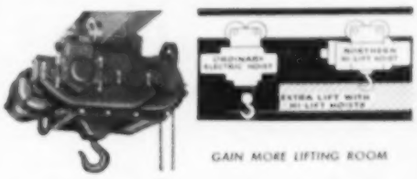
IT PRINTS ON
POSTCARDS SHIPPING TAGS
BOXES CARTONS
LABELS PACKAGES

At Your Office or Shipping Room Supply Dealer

MULTISTAMP
STENCIL DUPLICATOR
MANUFACTURED ONLY BY THE MULTISTAMP CO., INC. NORFOLK, VIRGINIA

If you write maker identify as IEN - 10001

the heavy-duty hoist for low headroom service



GAIN MORE LIFTING ROOM

NORTHERN HI-LIFT
HEAVY-DUTY
ELECTRIC HOISTS

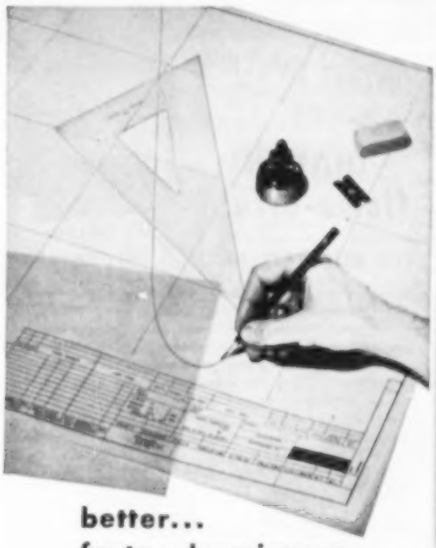
Heavy load capacity combined with high hook lift—unique in heavy-duty hoists—is the major outstanding feature in NORTHERN HI-LIFT HOISTS, providing for more efficient use of work and storage areas. Capacities: up to 15 tons, standard. Cab control if desired.

Write for Bulletin H-110-163

NORTHERN ENGINEERING WORKS, 2615 Atwater St., Detroit 7, Mich.

NORTHERN CRANES AND HOISTS

If you write maker identify as IEN - 10002



better... faster drawing on

VINYLITE RIGID SHEET!

Here's the newest, most advanced idea in drawing materials—semi-transparent sheets of VINYLITE Brand Plastic . . . with accurate grid lines and title blocks printed *from the back!*

This means that drawings can be made with more precision, more easily, for these sheets of VINYLITE Plastics are dimensionally stable—won't shrink or stretch. It means clean, quick erasures—even ink can be scratched off with a razor blade. Your pencil is never in contact with the printing that *shows through* the tough sheet!

What's more, sheets of VINYLITE Plastic are easy to keep clean—they won't absorb grease, are resistant to water, perspiration, chemicals, most acids and alkalies. Finger marks and smudges wipe off with a damp cloth. And VINYLITE Rigid Sheets are easy to handle—stiff and crisp, yet pliable, they roll up or lie flat—resist wrinkling, cracking, fraying and aging. Since drawings can readily be removed from them, they can be re-used again and again this new time-and-money-saving way.

VINYLITE Rigid Sheets are finding scores of uses in defense and basic industry—templates, calculators, precision drafting instruments, maps and photographic transparencies, for instance. Learn more about them. Write Dept. NJ-5.

Data on "Dimoglass" sheets courtesy Di-Noc Company, Cleveland, Ohio

Vinylite BRAND
PLASTICS

TRADE MARK

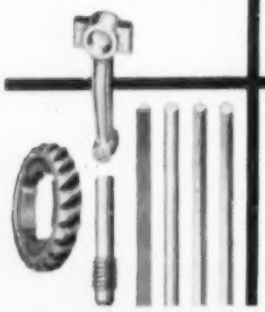
BAKELITE COMPANY
A Division of
Union Carbide and Carbon Corporation
30 East 42nd Street, New York 17, N. Y.

If you write maker identify as IEN - 10004

MUELLER BRASS CO.
"600" SERIES
a better bearing
bronze containing
no hard-to-get tin

If you use gears, connecting rods or other parts requiring bearing properties, it will pay you to investigate "600" Series, a high strength bronze that outwears so tin. "600" Series bearing metals can be forged into relatively complicated shapes and the forged shape is closer to finished size than a casting, often requires less machining, and eliminates the need of a bushing. "600" Series is available in standard and special extruded shapes in 12' mill lengths. These alloys have a low coefficient of friction, a tensile strength 2½ times greater than cast phosphor bronzes and high resistance to corrosion . . . write today for further facts.

Typical forged parts and rod shapes produced from Mueller Brass Co. "600" Series bearing bronze



MUELLER
BRASS CO.
PORT HURON 27,
MICHIGAN

73-8

If you write maker identify as IEN - 10005

positive safety!

INSTANT SWITCHING ACTION with
wheelco flame-otrol

MODEL 1300

FOR ALL TYPES OF OIL FIRED BURNERS

To protect your oil fired equipment from combustion failure the Wheelco Flame-otrol has been engineered with instantaneous safety shut-off action. Response to any unsafe condition is immediate and sure. Safe start is guaranteed . . . whether following a cold start, temperature or limit control action, flame or power failure. Resumption of fuel flow is allowed only when ignition is assured. An automatic proving period checks electronic and sensing circuits for any defect that might cause hazardous operation. Approved by the Associated Factory Mutual Laboratories and Underwriter's Laboratories.

WRITE FOR FLAME-OTROL BULLETIN F-3

wheelco instruments division
BARBER-COLMAN COMPANY
1204 ROCK ST. • ROCKFORD, ILLINOIS, U.S.A.

If you write maker identify as IEN - 10006

Readywipe
GREASE KING WIPERS
16¢ lb.

The ABC of Wiping Cloths

Absorbent – 425% of dry weight.

Budget-priced – 16 cents a pound.

Clean – washed and sterilized in our own laundry.

Soft, lightweight cotton mesh flat stock, carefully trimmed to 24" x 36", averaging 10 to 12 wipers to a pound. Uniform in size, shape and absorbency. Use Grease King wipers regularly to save on money and man hours.

Mail coupon today for a 100-pound trial bale, or a generous postpaid sample for $1.

YOUR SATISFACTION GUARANTEED

CHARLES BELSKY & SONS, INC.
5374 MAIN STREET, HOLYOKE, MASSACHUSETTS

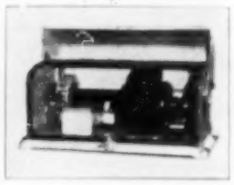
☐ Please ship at once a 100 lb. trial bale of GREASE KING wipers.
☐ I enclose $1.00 for a generous working sample.

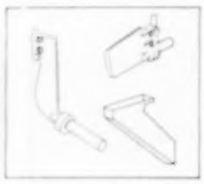
NAME _____
FIRM _____
CITY _____ STATE _____

If you write maker identify as IEN - 10007

TESTING . . Motor driven sampler moves cutter through a flow stream

Source: GALIGHER CO.
543-47 W. 8th St., Salt Lake City 4, Utah





Ask for Catalog 51-S

Galigher, Junior is a new unit in the company's line of motor driven screw and chain operated sampling machines to move a sampling cutter through a flowing stream of liquid or dry materials at a predetermined uniform rate and at predetermined intervals. The new unit provides a 12-in. stroke and can be fitted with any one of several cutters to handle wet or dry materials under given conditions. Three typical cutters are shown to the right in the illustration.

The machine takes a right angle cut across the whole flow stream part of the time. It takes equal percentages from all parts of the stream, maintains a constant interval between cuts by means of a timer-control. The sampling capacity can be made variable. Action is automatic after the operating circuit has been closed.

If you write maker identify as IEN - 10008

LUBRICATING . . Wick feed oiler cleans and feeds oil to a bearing

Source: OIL-RITE CORP.
2372 Waldo Blvd., Manitowoc, Wis.

Handles light oil

Four sizes with capacity from $\frac{1}{8}$ to $\frac{3}{4}$ oz. are included in a new style-WOB hexagon brass body oiler. It is fitted with a knurled brass screw top and with a central vertical tube and oil feed wick. The wick winds around the outside of the tube inside the body and then passes down through the tube to pick up oil by capillary action and carry it to the bearing surface.

Filter action permits only clean oil to reach the bearing. Pipe connection is $\frac{3}{8}$ in. on all four sizes. Overall height is $1\frac{3}{8}$ to $2\frac{3}{4}$ inches. Cap diameter is $\frac{5}{8}$ to $1\frac{1}{8}$ inches.

Identify as IEN - 10009

School opens for you at Binks in Chicago if you want to learn about industrial spray painting. Two sessions, one week each, will be held at the company's plant in October and November. The school is suited particularly for foremen, supervisors. It covers operation and maintenance of manual and automatic equipment. There is no tuition.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10010

***it's* FAST**
***it's* EASY**
***it's* ECONOMICAL**

These high speed, sensitive tapping attachments are quickly and easily mounted on any drill press. They turn out clean, accurate threads just as fast as tapping can be done. A built-in friction clutch assures full protection to taps and work.

Details in Bulletin No. 22. See your Ettco-Emrick distributor or write to us.

Ettco-Emrick for Drilling and Tapping Equipment at its best

ETTCO TOOL COMPANY
591 Johnson Avenue
BROOKLYN 37, N. Y.

If you write maker identify as IEN - 10011

"What's new at Kraus?"

"I'm at the Rochester airport. I have a two hour lay over. Why don't you pick me up? I want to see what's new at Kraus."

It was one of the many such phone calls we've received from our customers. A trip to Kraus will show the interesting things being done with automatic hoppers and assembly machines . . . may suggest new applications to their own plants.

But you don't have to fly to our plant to know what's new at Kraus. Drop us a card today. We'll send you our complete catalog. And if you have immediate problems, send samples.

kdi
KRAUS DESIGN, Inc.
948 EXCHANGE ST.
ROCHESTER 8, N. Y.

If you write maker identify as IEN - 10012

SEE THIS NEW WAY TO SAVE LIVES AND PROPERTY FROM FIRE

NEW ELECTRONIC DETECTOR SPOTS THE FIRE BEFORE IT REALLY GETS STARTED, PROVIDES LOW-COST 24-HR. PROTECTION

It's speed that counts in stopping fires. Here is a new means of fire detection that doesn't wait until the flames start, doesn't wait for heat to build up. The American Electronic Sentry detects the first wisp of smoke that crosses the light beam, flashes an alarm even before sprinkler heads go into action! Nothing like it for warehouses, barracks, hospitals, defense plants.

IT'S SIMPLE, IT'S INEXPENSIVE

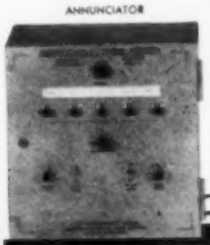
Essentially, The American Electronic Sentry System consists of a Light-Beam Projector, a photo-electric Sensor, and an Annunciator Panel. Projectors and Sensors are used in pairs. One pair can "watch" an area of about 150 ft. x 30 ft.—can detect even a puff of cigarette smoke.

The Annunciator Panel may be located nearby, or up to 2 miles away, connected by inexpensive wiring.

Current consumption is low—only about 50 watts per unit. Any type of signalling device—horn, bell, siren, or light may be used for additional alarms.

FM Approved by Factory Mutual Laboratories

ANNUNCIATOR



PROTECTED AGAINST FAILURE

The Projector has a built-in supervisory circuit to warn of failures. Voltage variations are corrected so operation is stable. Interruptions by sabotage, accident or power failure set off an alarm.

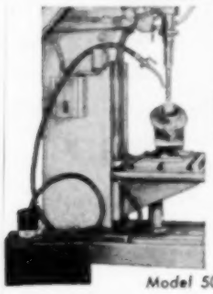
WRITE FOR FULL DETAILS

Full information on The American Electronic Sentry may be obtained promptly and without obligation by writing to . . .

ELECTRONICS DIVISION
AMERICAN ENCAUSTIC TILING CO., INC.
903 Kenilworth Ave., Lansdale, Pennsylvania

If you write maker identify as IEN - 10014

BRADY coolant pumps



WILL SAVE YOU MONEY!

only $64.50 f.o.b. factory

Model 500 ST

For Permanent or Temporary Use

Here's one of our most popular ball bearing pump and tank units...portable—up to 500 GPH—with 5 gal. steel tank. Complete with hoses, nozzle, and electrical cord with plug.

Write for catalog on our complete line

316BC

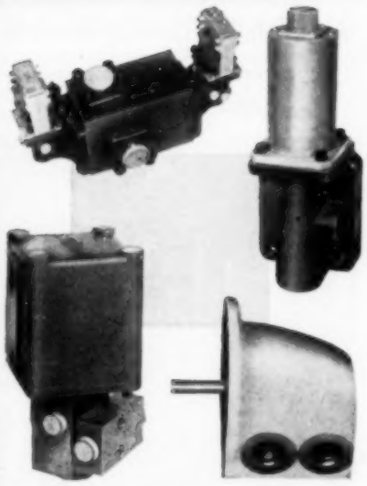
Brady CORPORATION

1003 East 18th Street Muncie, Indiana

If you write maker identify as IEN - 10015

SUPERDRAULIC

PUMPS • VALVES • TRANSMISSIONS • TEST STANDS • REMOTE CONTROLS



HYDRAULIC VALVES

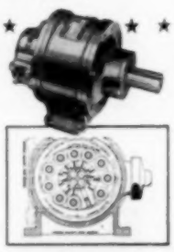
RELIEF — CHECK — SEQUENCE
PROPORTIONAL — PRESSURE REDUCING
TWO WAY — FOUR WAY

We manufacture highest quality standard and special valves of all types for use with hydraulic pumps in power units and hydraulic equipment for all applications.

Write for our new catalog

★ ★ ★ ★ ★ ★ ★ ★ ★ ★

FAMOUS SUPERDRAULIC HIGH PRESSURE PUMP



Develops up to 60 H.P. at 5,000 P.S.I. Let us quote on your requirements.

Superdraulic CORPORATION

14234 WYOMING AVE. • DETROIT 4, MICH.

If you write maker identify as IEN - 10017

CONTROL . . Resistance element actuates relay on liquid level change

Source: GENERAL ELECTRIC CO.
Dept. 6X-201, Schenectady 5, N. Y.

Ask for Bulletin GEA-5766

Thermasul trade names a new element consisting of sintered sulphide and an electric heating element hermetically sealed in a stainless steel tube. This tube is attached to a 10-ft. extension tube, also made of stainless steel, to carry electric leads from the sensitive element out through a second 10-ft. length of Neoprene flexible tube for connection to a control relay.

The heating element maintains temperature in the sulphide at about 280 deg. C. above ambient air temperature at which point electrical resistance through the sulphide is low. Immersing the element in liquid results in rapid conduction of heat away from it and corresponding increase in its electrical resistance. This change in resistance operates the relay as a switch to open and close an alarm or supervisory circuit or to actuate line relays to motors or valves.

If you write maker identify as IEN - 10018

PAINTING . . Plastic-base fluid for protective use on concrete floor

Source: J. LANDAU CO.
221 Wooster St., Room #3, New York 12, N. Y.

Sample available upon request

Series 700 is a new plastic-base paint for brush or spray application on a concrete floor. It protects against attack by acids, alkalis, gasoline and prevents water penetration. The paint is resistant to abrasion, hard wear and shock loading. It is available in 12 stock colors. List price, depending upon color, ranges from $6.25 to $6.50 per gallon in 5-gal. pails. It is $6.45 to $6.70 per gallon in single gallon cans.

If you write maker identify as IEN - 10019

HANDLING . . Pipe nipple box holds supply of 11 lengths to 6 inch

Source: THON'S TWO-FACED TOTERS
114-A E. Broadway, Owatonna, Minn.

About $10

Covers on opposite faces of this new 20-gage steel box are mounted on piano type hinges and are equipped with latches. They enclose 11 compartments in varying depths for nipples from "close" to 6 in. in length. Each compartment takes 6 nipples so the total on the two sides of the central partition is 132. Two box sizes will take ¾ or ½-in. and ½ or ⅜-in. nipples.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10020

Are You Making Full Use of RUBBER PRODUCTS Like These?

Then Find Out About Our Specialty— VOLUME PRODUCTION OF . . .

Rubber Convoluted Boots, Accordion-type Seals, Boots and Sleeves for Machinery, Bellows, Tubing, Covers, Sacs, Grommets, Caps and Bulbs!

Write Today for FREE Brochure

which will show you how others have solved design and production problems with Dipped Rubber Parts — Complete with Pictures and Prints!

Midwest Rubber COMPANY
17226 Conant Road, Detroit 12, Michigan

If you write maker identify as IEN - 10021

HOW TO IMPROVE YOUR PRODUCTS AT LOW COST

PERMACLAD
STAINLESS CLAD STEEL
ALAN WOOD STEEL COMPANY
CONSHOHOCKEN, PA.
Over 125 Years of Iron and Steel Making Experience

Other Products: A.W. ALGRIP Abrasive Floor Plate • A.W. SUPER DIAMOND Floor Plate • Plates • Sheets • Strip • (Alloy and Special Grades)

If you write maker identify as IEN - 10022

Fans . . Blowers FOR ALL INDUSTRY
"Standard Units or Custom Design"

DOUBLE SWIVEL AEROSPOT

Fans and blowers in a wide range of standard size units are available for specific air moving and ventilating requirements. Special custom designed equipment can also be furnished. Our staff of engineers is at your disposal for competent advice on any ventilating problem. Correspondence invited, without obligation.

SEND FOR CATALOG TODAY!

For column or wall mounting. Saves valuable floor space. Direction of blast adjustable 360° around Spindle Axis, 90° around Motor Support Axis. Sizes, 20" to 36".

6 Blade DYNAFLOW Unit

Also available in two and four blade types. Sizes, 10" to 30".

DUCTYPE BLOWER

Direct driven, single or tandem fan units. Also available with belt drive. Sizes, 10" to 30".

SOUTH BEND AIR PRODUCTS, Inc.

If you write maker identify as IEN - 10023

now ONE GOVERNOR ONE MODEL . . . for 9 out of 10 industrial and farm engines

PIERCE LONG RANGE UNIVERSAL GOVERNOR

● Instant variable speed selection and accurate engine control at any speed setting within 1200 to 2600 RPM. Higher and lower ranges obtainable by simple change of pulley. Also "constant speed" operation.

● Accurate, dependable speed control for engines operating corn shellers, drag lines, hoists, arc welders, trucks and tractors with power take-offs, etc.

Write for Complete Information

DEALERSHIPS AVAILABLE

List Price $39.50
Pulley Extra 4" $1.70 5" $1.75

THE PIERCE GOVERNOR COMPANY, INC.
1640 Ohio Avenue, Box 1000, Anderson, Indiana, U. S. A.

WORLD'S MOST EXPERIENCED GOVERNOR MANUFACTURER

If you write maker identify as IEN - 10024

Because they wear longer...stand up better to the destructive effects of heat, abrasion, corrosion and chemical action, Wissco Metal Processing Belts have become the accepted standard for varied applications involving processing and heat treating.

They're your assurance of uninterrupted trouble-free production at a time when stoppages cannot be tolerated.

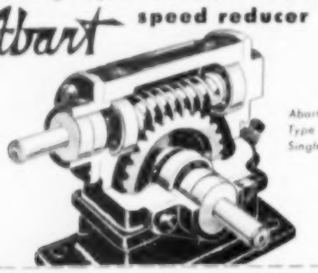
For additional information write or phone our nearest sales office.

EAST: Wickwire Spencer Steel Division, Clinton, Mass.
WEST: The Colorado Fuel & Iron Corporation, Denver, Colorado
PACIFIC COAST: The California Wire Cloth Corporation, Oakland, California

WISSCO BELTS
PRODUCT OF WICKWIRE SPENCER STEEL DIVISION
THE COLORADO FUEL AND IRON CORPORATION

If you write maker identify as IEN - 10025

Here's the INSIDE Of An Abart speed reducer



Abart
Type 1½ A
Single Reduction

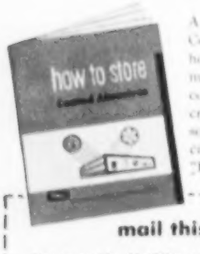
Just note the simple design, trouble-proof construction — worm wheel, bearings, oil seals — with the compact, oil-tight housing that contains all bearing supports to insure permanent alignment! Too — the large oil reservoir base for positive lubrication. Long-life, trouble-free Abart single and double reduction Speed Reducers are available in spur gear, worm gear, or combination gear types from 1/50 to 168 HP with ratios up to 10,000 to 1. Sales and service nation wide. Ask for this pocket size data book and Catalog, and name of your nearest distributor.

Abart GEAR & MACHINE CO.
4823 WEST 16th STREET • CHICAGO 50, ILLINOIS
Mfrs. of Gears, Speed Reducers and Gearmotors

If you write maker identify as IEN - 10026

Stop wasting money!

Protect your investment in coated abrasives



A new booklet from Armour's Coated Abrasives Division tells you how to stop losses—in time and money—from improperly stored coated abrasives. Clogging, filling, cracking, loss of grains—these are some of the things proper storage can prevent. Send for free copy of "How to Store Coated Abrasives."

mail this coupon today

Please send booklet "How to Store Coated Abrasives."

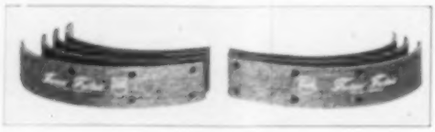
Name .....
Company .....
Address .....
City ..... Zone ..... State .....

ARMOUR *Coated Abrasives*
Armour and Company • North Benton Road • Alliance, Ohio

If you write maker identify as IEN - 10027

DRIVE . . Formed brake lining in sets for rivet or bond assembly

Source: RUSSELL MFG. CO.
86-90 E. Main St., Middletown, Conn.



No tendency to grab or fade

The company announces receipt of patent No. 2584825 covering its Rusco Fused Fabric brake lining which it has added to its previously developed clutch linings. The material is available in formed sets as shown in the illustration for motor vehicle brakes. It is available to specification to apply as new equipment or replacement on brakes on machinery.

Strands of asbestos, laid at random, are saturated and surrounded by a frictional binder material. The mass is compressed under 500 ton pressure to produce a material with density of 120 lb. per cu. ft. with uniform structure throughout and uniform co-efficient of friction. The lining will not absorb water. Frictional heat evaporates surface moisture.

If you write maker identify as IEN - 10028

GAGE . . Moving coil instrument makes contact at high and low limits

Source: WESTON ELECTRICAL INSTRUMENT CORP.
641 Frelinghuysen Ave., Newark 5, N. J.

Limit watchman

Variables such as pressure, temperature, liquid level, flow and others that can be expressed in terms of voltage or current can be indicated, and predetermined limits can be signaled or used for control points by this new Model 1087 instrument. Its pointer is operated by a moving coil and carries contacts for one side of a circuit. Two adjustable fingers, one on each side of the pointer, carry contacts to complete the circuit when the pointer reaches their position on one side or the other.

The contact circuit is electrically insulated from the moving-coil circuit and is tested for 500-volt resistance on ac. between the two as well as between all circuits in the housing. Contact rating is 6 volts and 0.03 amp. dc.

Identify as IEN - 10029

Colton Chemical is the new source for Flotofoam insulation, the company having purchased this portion of United States Rubber Company's business. The material is particularly suited for insulation in show case freezers, refrigerator cars, ice cream trucks, locker plants, household and walk in freezers. It has a "K" factor of 0.18 at a mean temperature of 75 deg. F. It is available in block, panel and shredded form. It can be surfaced with paper, aluminum foil, cloth or resin coatings. It weighs 0.8 lb. per cubic foot and is a urea formaldehyde plastic material.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10030

discover

PITCHLIGN
Trade Mark

RBC's NEW ROLLER BEARING

. . . the only bearing with a cage that guides the rollers along their entire length at the pitch circle. The cage, in turn, is rigidly supported by two shoulders of the race on which it rides. This provides DOUBLE ALIGNMENT—just one of the many exclusive PITCHLIGN features. Get the full story. *Write for Bulletin SF 1066.*

GET THE FACTS
WRITE TODAY

RBC
ROLLER BEARING COMPANY OF AMERICA
TRENTON, N. J.

If you write maker identify as IEN - 10031

For Pressure Loads from 5 lbs. to 40,000 lbs.

In Sizes from ¼" to 24"

SAFETY HEADS

for Instant, Unrestricted

RELIEF

Bland, Corrosive, Viscous or Fluid Liquids • Vapors • Gases • Air

Affording the fastest, most complete relief of over-pressure, BS&B Safety Heads can be used both as primary or secondary relief devices on your pressure vessels or lines. Designed to rupture within ± 5 lbs. of pre-determined pressure, Safety Heads are precision made for specific applications, in various metals and sizes.

BS&B SAFETY HEADS
BLACK, SIVALLS & BRYSON, INC.
SAFETY HEAD DIVISION, DEPT. 2-L5
7500 E. 12TH ST., KANSAS CITY 3, MO.

If you write maker identify as IEN - 10032

for DIE TRY-OUT WORK this

DAKE

GUIDED PLATEN PRESS

provides positive pressure and accurate control

Saves 15% to 20% of labor cost and takes the hard work out of matching dies

If die matching is a "headache" in your shop, it will pay you to find out what Dake Die Try-Out Presses can do for you.

They enable you to match dies in the tool room and keep production equipment at work. They handle short run and sample jobs. Their air- or electric-powered hydraulic operation saves workers' time and physical strain.

For detailed information, write for special bulletin on Dake Die Try-Out Presses.

DAKE PRESSES
DAKE ENGINE COMPANY
614 Seventh St.
Grand Haven, Mich.

Arbor Presses · Hand-Operated Hydraulic · Power-Operated Hydraulic · Guided Platen · Gap Type Presses · Movable Frame

If you write maker identify as IEN - 10034

Get your copy of this NEW BULLETIN!

This important new Bulletin WH-851 explains in detail the causes and damaging effects of costly Water Hammer—and how it can easily be controlled with Williams-Hager Silent Check Valves. Learn how Water Hammer can be quickly and inexpensively controlled *in your piping system*—send for your copy of this new bulletin today.

THE WILLIAMS GAUGE COMPANY
1620-22-24 Pennsylvania Ave. • Pittsburgh 33, Pa.

If you write maker identify as IEN - 10035

DISCRIMINATING ENGINEERS USE Grafo

COLLOIDAL GRAPHITE for DEPENDABLE LUBRICATION

THERE IS NO BETTER LUBRICANT—NO SUBSTITUTE for Grafo

A dispersion of Grafo colloidal graphite in petroleum, oil, water, castor oil, or other vehicle to meet your requirement is available.

Reduce friction, extend lubrication cycles, increase production with Grafo lubricants.

PERFORMANCE PROVED

On industrial applications such as Hot and Cold Forging, Drawing, Stamping, Steam Cylinders, Wire Drawing, Metal Extrusion, Impregnation, Parting Compounds, Die Casting—All Rubbing and Sliding Surfaces—High or Low Temperatures.

Write Us Regarding Your Special Applications

GRAFO COLLOIDS CORPORATION

MANUFACTURERS OF Grafo COLLOIDAL PRODUCTS

299 WILKES PLACE
SHARON, PENNSYLVANIA

If you write maker identify as IEN - 10036

INDUSTRIAL DOORS "PACKAGED" — *Ready to Install*

A 3 hour job for any maintenance crew.

Only the Prest-O-Matic comes to you with door and jambs, and all hardware including motor operator, completely assembled. This is your guarantee of perfect performance.

- ★ OPEN OR CLOSE IN 3½ SECONDS
- ★ PERMITS FULL USE OF DOORWAY WIDTH
- ★ NO ALTERATIONS OR FITTING NEEDED
- ★ SEALED AGAINST WEATHER OR WIND

PREST-O-MATIC

Industrial Doors function faultlessly because they are designed "in balance," utilize thrust and roller bearings and operating mechanism adequate to heaviest usage. Pneumatic, Pull-cord, Floor Plate or Electric Eye optional.

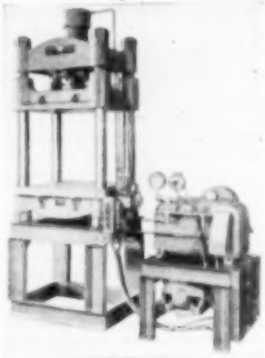
Write for Catalog!

CLARK DOOR COMPANY
519 Hunterdon Street • Newark 8, N. J.

If you write maker identify as IEN - 10037

PRESSES . . Hydraulic design, hand and power operated, 10 to 500 ton

Source: RODGERS HYDRAULIC INC.
7450 Walker St., Minneapolis 16, Minn.



Ask for Catalog 320

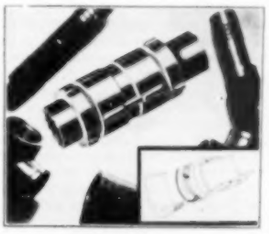
Illustrated is a representative power operated assembly in the company's new Blue Ribbon Line of hand and power operated hydraulic presses. The line includes single and multiple platen assemblies in single and double acting arrangement to apply pressure upward or downward. Movable platens are made of cast steel with bronze bushings to ride on the four ground and polished cold rolled steel tie rods. The power cylinder is made of hard drawn seamless steel tubing, bored and honed. Ram and piston are heat treated alloy steel with bronze bearing on the steel at all sliding surfaces. Cylinder design is either single or double acting. The cylinder is arranged so it can be removed for use outside of the press or for servicing.

Hand pumps develop a maximum pressure of 10,000 lb. and are designed for automatic shift between low pressure fast approach and high pressure power movement. The motor driven design is a 2 or 4 cylinder assembly rating 2½ or 5½ gpm. These two pumps can be equipped with auxiliary pumps or accumulators for fast approach and return.

If you write maker identify as IEN - 10038

PIPE . . Rigid plastic and fittings, chemically inert, corrosion proof

Source: CARLON PRODUCTS CORP.
10225 Meech Ave., Cleveland 5, Ohio



To replace metal

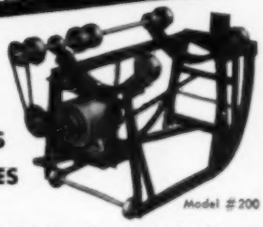
Sizes range from ½ to 2 in. for the company's new light weight Carlon-L plastic pipe. It is available in 10 and 20 ft. random lengths. It rates 1,000-lb. burst pressure in 1-in. diameter.

A new fitting, compression design, is available to join the ends of two lengths of the pipe by compressing a pair of gaskets radially inward against the pipe wall when the fitting ends are tightened. Additional fittings include tees and elbows of slip-sleeve design. The pipe will handle corrosive fumes, gases, vapors, water. It can be employed for suction line and is suited for use as underground and underwater conduit.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10039

MORSE PORTABLE ROTATOR



- **MIXES**
- **CLEANS**
- **TUMBLES**

Model #200

A retractable caster frame offers simpler handling of containers with the Morse Rotator. Two Neoprene Drive Wheels prevent creeping. Four drive wheels give positive driving action and two idler wheels with Torrington Needle Bearings make the Morse Rotator a smoothly operating unit. Tipping lever included with each Rotator. Write for free folder showing complete Morse line.

Less motor and drive—Wt. 75 lbs.	$147.75
Complete with motor—Wt. 155 lbs.	$228.25

MORSE MANUFACTURING CO. INC.
123 Dickerson Street Syracuse 2, N. Y.

If you write maker identify as IEN - 10040

Use Spencer Vacuum

There's no production time lost when Spencer Vacuum is used to clean soaking pits, brick kiln flues and remove boiler fly ash. While still hot, tons of debris are removed every day at temperatures up to 500°F.

The car wheel pit above is 30 feet deep. One man, at the top of the pit, empties it in minutes instead of hours. No dust is distributed in the plant.

Plant housekeeping costs nothing when Spencer Vacuum is installed. It increases production—reclaims materials, conveys foods—and in off hours—cleans the plant itself. 132 ways to save described in Bulletin 144.

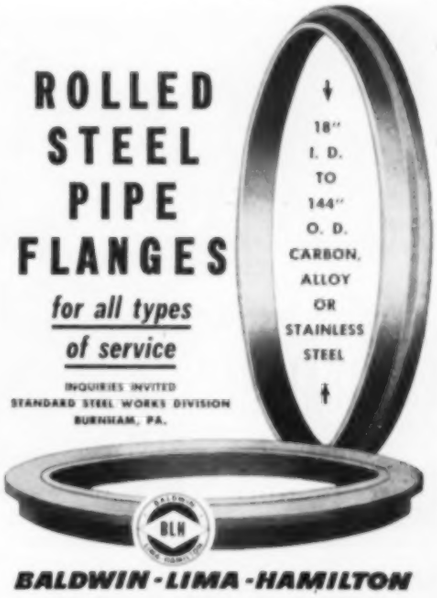
THE SPENCER TURBINE COMPANY • HARTFORD 6, CONNECTICUT
SPENCER HARTFORD

If you write maker identify as IEN - 10041

ROLLED STEEL PIPE FLANGES

for all types of service

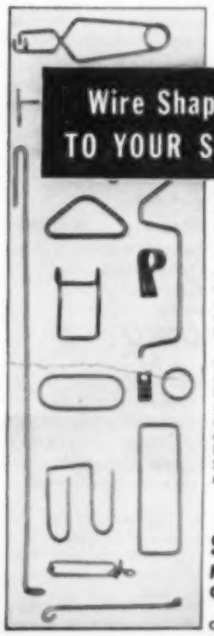
INQUIRIES INVITED
STANDARD STEEL WORKS DIVISION
BURNHAM, PA.



BALDWIN-LIMA-HAMILTON

General Offices: Philadelphia 42, Pa. Offices in Principal Cities

If you write maker identify as IEN - 10042



Wire Shapes and Forms TO YOUR SPECIFICATIONS

● Your wire forms are produced fast, accurately and at low cost with Sommer mass-production methods.

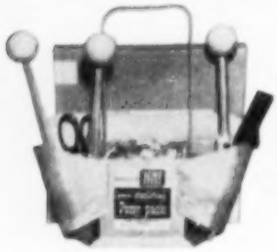
Speedy, automatic plating equipment handles either large or small assemblies. Popular new Zinc Iridite process adds a bright, durable, economical finish.

Sommer offers complete forming, stamping, cut-threading and butt-welding services. Let us work with you in designing and producing any wire shapes or forms needed for your defense contracts. Send sample, blueprint or drawing—see how Sommer can save you time and money.

SOMMER METALCRAFT CORPORATION
300 POSTON DRIVE
CRAWFORDSVILLE, INDIANA

If you write maker identify as IEN - 10043

Compact Steel Strapping Kit



New Acme Steel "Pony Pack" is lightweight, handy, complete with tools for fast, low-cost strapping.

Here's a handy, portable strapping outfit for work anywhere in your plant, warehouse, or yard . . . for fastening, re-coopering, securing, or reinforcing anything, anytime, anywhere.

It's Acme Steel's new "Pony Pack." It weighs about 20 pounds complete with metal carrier, 300-foot coil of Acme Steel strapping, a supply of seals, a stretching tool, sealing tool, and snips. For details, call the nearest Acme Steel office, or write Acme Steel Products Division, Department IEN-92.

ACME STEEL

ACME STEEL COMPANY
2840 Archer Avenue, Chicago 8, Illinois

If you write maker identify as IEN - 10044

DUST REMOVAL Or MATERIALS HANDLING

You can install SPIRATUBE yourself.

Whether your application requires dust removal . . . or materials handling . . . you can set up your lines of SPIRATUBE to meet your requirements. AND . . . what's more important — you can do it yourself. That cuts down-time to a minimum, and enables you to keep your ducting system in operation to meet your production needs.

SPIRATUBE — the new type flexible tubing — connects quickly, easily to your present lines . . . and bends anywhere with minimum crimping. No turn is too short, no angle too acute. No elbows or special fittings to bother with in going around obstructions!

And — important to you too: The initial cost of SPIRATUBE is small . . . and its life equals — sometimes exceeds — rigid ducts.

Standard sizes for all requirements are immediately available from well-stocked distributors — coast-to-coast.

For all ducting systems:

FLEXFLYTE® SPIRATUBE® AYRTUBE®

Flexible Tubing
CORPORATION
Guilford, Connecticut Pasadena 1, California

FREE! Full details on this amazing, cost-saving ducting. Fill in coupon and mail.

Please send me your new catalog on Flexible Tubing products.
My application is .....
Name ..... Title .....
Company .....
Address .....
City ..... State .....
IEN-2

IDEAS FOR YOU

Items of particular interest in the news other than straight new products, development pointing toward the future, unusual procedure to accomplish a point, suggestions for practical action, each to provide ideas for you.

Identify as IEN - 10046

Oil ash is prevented from forming a hard deposit on high-temperature surfaces in big boilers, when firing No. 6 fuel oil, by introduction of an additive in the oil ahead of the burners. Babcock and Wilcox has worked out procedure and has applied for a patent on the overall development. It is prepared to license the process on a royalty-free basis. The additive increases melting temperature of the ash so the deposit that is formed can be air-blown easily.

Identify as IEN - 10047

Plaster molds for aluminum castings are now being dried in a conveyor oven by means of Wiegand Chromalox radiant heating elements at the Scientific Cast Products plant. Production rate is about the same as the former gas-fired oven. At the same time net production has been increased by uniformity of the heat which minimizes rejected molds due to over or under-drying.

Identify as IEN - 10048

A thermal control senses the dryness of the clothing after a period of operation of the new Westinghouse Laundromat dryer whereupon five tone bars beat out a portion of the tune, "How dry I am, nobody knows how dry I am," and then shuts off. The notes are sounded clearly to be audible but not annoying. It's a new "wrinkle" in laundry appliances.

Identify as IEN - 10049

You can rent the weekly film badge service with which to measure personnel exposure to radioactive radiation. The service includes badges that can be worn at various body locations. A supply of these badges is forwarded each week, are worn during the following week and are mailed back to the company for development and evaluation. Booklet describes it.

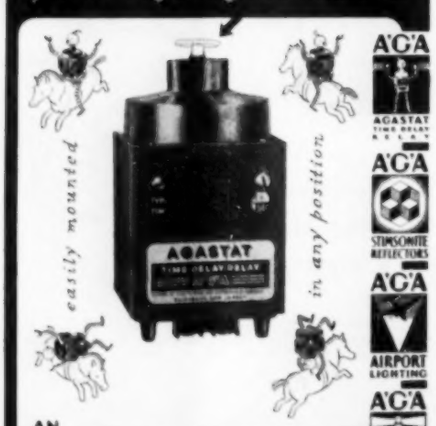
Identify as IEN - 10050

Walkie-Lookie names the battery operated back-pack television transmitting equipment by RCA that was employed in the Chicago Conventions. A miniature television camera designed about the new RCA Vidicon pickup tube and a small one-piece TV transmitter and transmitting antenna make up the equipment carried by the operator. It weighs altogether a little over 50 pounds. Operation is in connection with a control station that can be located as far away as a mile.

Signals corresponding to the scene being televised are transmitted along with synchronizing impulses to the control station where the two are combined into one signal for transmission by wire or by microwave relay to the TV broadcast station. Two small antennas extending from the top of the pack are used to transmit the picture signal to the control station and to receive voice and control signals from the same point. Perhaps soon, "we'll be seeing you."

If you write maker identify as IEN - 10052

simple adjustment!
special adjusting disc available



A'G'A AGASTAT TIME DELAY RELAYS
A'G'A STOPSONITE REFLECTORS
A'G'A AIRPORT LIGHTING
A'G'A MARINE LIGHTING EQUIPMENT

AN **AGASTAT** TIME DELAY RELAY for every requirement

A'G'A DIVISION OF ELASTIC STOP NUT CORPORATION OF AMERICA
1027 NEWARK AVE., ELIZABETH 3, NEW JERSEY

If you write maker identify as IEN - 10053

operating pressures recommended up to 1500 p.s.i.

CATALOG H-7 AVAILABLE ON REQUEST

"COMMERCIAL"
THE COMMERCIAL SHEARING AND STAMPING COMPANY
1775 LOGAN AVE. YOUNGSTOWN 1, OHIO

If you write maker identify as IEN - 10054

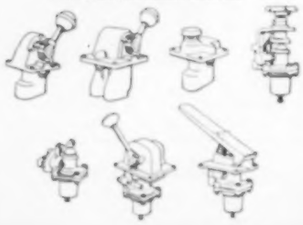
PRODUCTIVITY UP ...COSTS-DOWN

With the NEW . . . Complete Line of
WESTINGHOUSE CUSHIONED PNEUMATIC CYLINDERS

8 STAR FEATURE

1. DIAMETERS: 1½" to 8" . . . required stroke
2. CUSHIONED ADJUSTABLE STROKE
3. FLANGE, FOOT, SWIVEL, OR TRUNNION MOUNTING
4. PRESSURE TYPE END SEALS AGAINST LEAKAGE
5. ROTATING HEADS for EASY INSTALLATION
6. SOLID CONSTRUCTION—NO STAY BOLT STRETCH
7. STOCK HEADS, RODS AND BARRELS ASSEMBLE TO MEET REQUIREMENTS
8. PACKING CUPS OF FAMOUS "WABCO" ® COMPOSITION

Combined with a complete range of modern pneumatic controls.



INDUSTRIAL PRODUCTS DIVISION WESTINGHOUSE AIR BRAKE COMPANY WILMERDING, PENNA.

Factory Branch: EMERYVILLE, CALIF. Distributors throughout the United States . . . Consult your Classified Directory. Distributed in Canada by: Canadian Westinghouse Co., Ltd., Hamilton, Ontario.

If you write maker identify as IEN - 10056

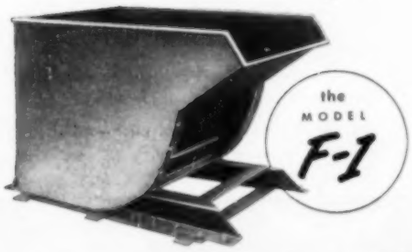
DILLON
Universal
TESTER

Capacities from as low as 250 lbs. up to 10,000 lbs.—all in the same tester! A low-priced precision instrument for TENSILE-COMPRESSION-TRANSVERSE-SHEAR testing. Handles rounds, flats, special shapes. Motorized or hand operated, weighs only 137 lbs. Calibrated with Morehouse Ring certified by U. S. Bureau of Standards. A lifetime tester for shop or lab. In use by leading companies everywhere. Write today for 8-page bulletin in color!

WRITE FOR ILLUSTRATED BULLETINS
W. C. DILLON & CO., INC. 1421 K South Circle Ave. Forest Park, Illinois

If you write maker identify as IEN - 10057

Here's the Answer
to BULK
MATERIAL HANDLING
PROBLEMS



Phillips "Skid-Dump"

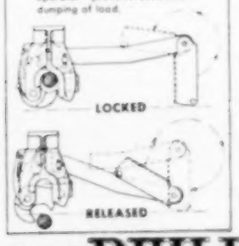
Bulk materials of all kinds are handled with maximum efficiency at minimum cost . . . with the Model F-1 "Skid-Dump. Used with pallet or fork lift truck, it automatically dumps and returns to original position. Smooth, rolled edges of 3/16" steel plate, welded undercarriage provide safety, long-life, strength and durability. Capacity—1 cu. yd.

Write for Bulletin E-15

Heaviest materials easily handled with pallet truck.

Automatically dumps materials, returns and locks in original position.

New Safety Lock®
Provides maximum safety for operator—prevents accidental dumping of load.



Conveniently stacked, empty or full.

MANUFACTURERS SINCE 1863 PHILLIPS PITTSBURGH, PA.
MATERIALS HANDLING EQUIPMENT
2500 JANE STREET • PITTSBURGH 3, PA.

IDEAS FOR YOU—Continued

Identify as IEN - 10059

Rosin coating is now available on Fastener Corporation staples to improve gripping power when they are driven into wood. The company reports doubled ability to hold against pulling out as compared to the plain staples.

Identify as IEN - 10060

For five years in a row Allis-Chalmers has turned over its West Allis clubhouse for Post-Prom parties by the two high schools in West Allis. The Rotary Club joins the company in sponsoring the parties and putting on entertainment that includes five specialty acts, a turkey dinner, a dance orchestra and the presentation of four wrist watches donated by a West Allis merchant. The company has a deep interest in the parties because many of the boys and girls have their fathers and other members of their families at the West Allis Works. The action starts at midnight after the high school proms and lasts until 3:30 A.M.

Identify as IEN - 10061

Fifty-two engineer graduates from 29 colleges have been signed by Worthington Corporation for training, education and development of new technical personnel for all branches of the company, including sales, manufacturing, accounting, purchasing and engineering. A complete program has been established. A new group will be selected each year.

Identify as IEN - 10062

Coin Pak is Mellowes Company's name for new packaging of the lock washers it manufactures. The packs look like standard coin rolls. Twenty of them are contained in a carton. Single rolls can be taken to the job to be used as required. The remainder of the washers stand in orderly manner on the storage shelves.

Identify as IEN - 10063

Decatur Marine is an outfit in Brooklyn with a nice array of machine tools and metal working equipment which it is ready to put to work on a contract basis. Perhaps it could be used to good advantage as a manufacturing department for a western concern that wants to make at least a part of its product near the eastern market. The company will send a list of its equipment on request.

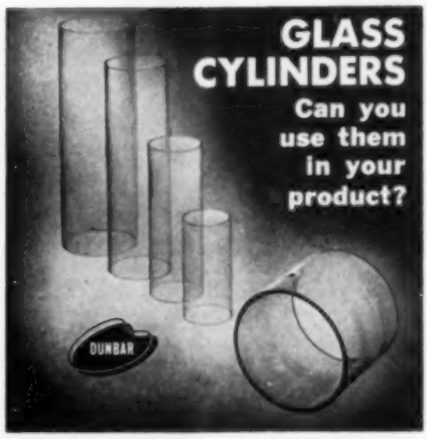
Identify as IEN - 10064

Molten stainless steel is poured at 3,100 deg. F. into thin plastic bonded shells rather than into heavy sand molds in a new shell mold process. Cooper Alloy Foundry brought it over from Germany following World War II. The mold is made in a machine that turns one out each 2½ min. for cast parts such as stainless steel bodies, bonnets, fittings. After the steel is poured into a shell it is left to cool. Upon shake-out the brittle shell falls away easily leaving the casting with an excellent surface finish and precision detail.

Identify as IEN - 10065

Cyclecore trade names a new structural panel now in production at Chrysler's Pekin Wood Products Plant as a weight saving component for building construction. It also has excellent heat insulating properties. A honeycomb of impregnated paper is faced on both edges with sheets of metal, wood, plastics or asbestos cement. The honeycomb center and the faces are permanently bonded with an adhesive. As an example, an interior panel being manufactured for a partition maker consists of a 2⅜-in. honeycomb center bonded to surfaces of asbestos cement measuring about ¼-in. in thickness.

If you write maker identify as IEN - 10066



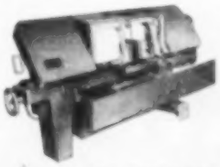
For dispensers, merchandise displays, visible hoppers, lighting fixtures, sight feeders, meters, columns or any other applications, DUNBAR offers you a wide variety of cylinder sizes in economical quantities. Or we will fabricate blown glass cylinders to your specifications. We invite your inquiries. Write Dept. 973 for our Glass Cylinder catalog No. C-51.

Dunbar Glass Corporation
DUNBAR, WEST VIRGINIA
NEW YORK • CHICAGO • LOS ANGELES

If you write maker identify as IEN - 10067

Kalamazoo
METAL CUTTING BAND SAWS

No stooping, no fumbling . . . just swing saw cover open and everything is at your fingertip. Release blade tension, remove blade, insert new one and tighten. It's as simple as that! Result? Minimum loss of time, less chance of damage to blade and of injury to operator.



This is but one of many exclusive Kalamazoo features that add up to lowest cost intermittent or continuous cutting. It will pay you to specify Kalamazoo Metal Cutting Band Saws . . . three sizes, available with coolant system and casters.

MACHINE TOOL DIVISION
Kalamazoo TANK and SILO CO.
911 HARRISON ST., KALAMAZOO, MICHIGAN

If you write maker identify as IEN - 10068

IBM reports—
5 drafting-room short cuts
now possible with Kodagraph
Autopositive Materials

A case history based on the experience of the International Business Machines Corp., Endicott, N. Y.

With Kodagraph Autopositive Paper— the revolutionary material that produces positive photographic intermediates *directly*; that can be *handled* in room light . . . *exposed* in a direct-process or blueprint machine, or vacuum frame . . . *processed* in standard photographic solutions.

1. **Redrafting time saved.** IBM makes Autopositives of standard plug-board panel drawings on which various wiring arrangements must be shown. To these intermediates, draftsmen simply add the wiring detail . . . and print-making masters are ready.

2. **Blueprints can be reproduced.** These prints are used to exchange design information between IBM plants. Whenever extra prints are needed for the shop, Autopositives are made directly and used to produce the required prints.

3. **Opaques no problem.** Autopositives can be made from charts, graphs, pasteups—even two-sided originals.

With Kodagraph Autopositive Film— which is handled, exposed, and processed like Autopositive Paper, but whose base is famous Kodak safety film—highly translucent, tough, matte-surfaced (to take pen or pencil notations).

4. **Old drawings are restored.** Weak lines are intensified, backgrounds are cleaned up, when IBM reproduces certain types of old drawings on Kodagraph Autopositive Film. As a result, sharp, legible shop prints can be produced at top speeds.

5. **Halftones are copied.** Printed illustrations—including halftones and line sketches—are reproduced faithfully on Autopositive Film. And from these intermediates, the desired number of direct-process prints is run—each sharp, crisp, clear.

Write today for a free copy of "Modern Drawing and Document Reproduction." It gives full facts on the complete line of Kodagraph Reproduction Materials, which you, or your local blueprinter, can process conveniently, economically.

EASTMAN KODAK COMPANY
Industrial Photographic Division
Rochester 4, N. Y.
Kodak

If you write maker identify as IEN - 10070

Economy Packages

FAFNIR PILLOW BLOCKS

The great variety of types and sizes of Fafnir Ball Bearing Power Transmission Units makes possible precise selection to meet exact specifications. Units feature the Fafnir Wide Inner Ring Ball Bearing with Self-Locking Collar . . . easiest of all to install . . . replaceable if necessary.

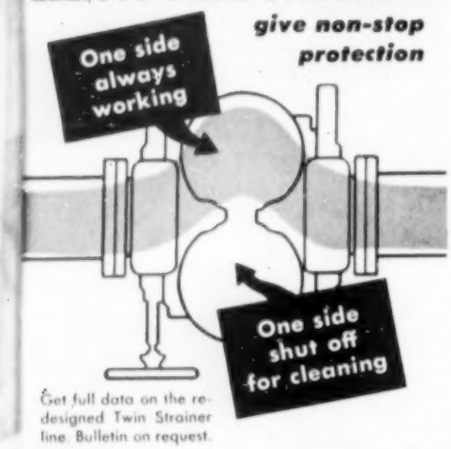
In Pillow Blocks, Fafnir offers single and double bearing types. Single bearing types available in light, standard, and heavy series . . . self-aligning or fixed and floating. For complete details call your Fafnir distributor or write The Fafnir Bearing Company, New Britain, Conn.

FAFNIR BALL BEARINGS
MOST COMPLETE LINE IN AMERICA

If you write maker identify as IEN - 10071

ELLIOTT TWIN STRAINERS

give non-stop protection



Get full data on the redesigned Twin Strainer line. Bulletin on request.

A 2-5

ELLIOTT Company
Accessories Dept., JEANNETTE, PA.
DISTRICT OFFICES IN PRINCIPAL CITIES

If you write maker identify as IEN - 10072

Don't Handcuff That Engine!

STOP Costly Cylinder Wear with the UNIVERSAL TOP OILER

- Reduces Valve and Ring Failures
- Lowers Fuel Octane Requirements
- Reduces Oil and Gas Consumption
- Frees Sticking Valves
- Increases Payload Power

The Universal Top Oiler assures constant, uniform top cylinder lubrication on all types of internal combustion engines by metering taperized top oil through the intake manifold. When used with an approved upper-cylinder lubricant, it neutralizes corrosive acids, stops carbon and gum formation, prevents dryness in the hottest, busiest part of the engine. Easy to install. List price: $5.95.

Provides maximum benefit when used continuously with Universal Top-Oil. Write for full details.

Gentlemen:
Please send complete information on the UNIVERSAL TOP OILER and the new Universal Top-Oil.

Name _____

Address _____

City _____

UNIVERSAL LUBRICATING SYSTEMS, INC.
785 ALLEGHENY AVENUE • OAKMONT, PA.

If you write maker identify as IEN - 10073

FEEDING . . Metering pump to measure out hot insulating wax

Source: EDWARD E. ROBINSON INC.
93-97 Park Ave., Nutley, N. J.

Operator starts action

New housing made of metal with internal insulation takes the place of insulation wrapped design, previously described IEN-250-51, of the company's motor driven adjustable metering pump. The new machine has been applied to heat and meter Plastisol insulation into television component molds. Accuracy is held within 3 per cent with operating rate to 88 ejections per minute. Temperature of the material in the insulated housing is held by electric elements and a fixed thermostat.

The material moves down through a throat leading to the small gear pump which acts as a seal when it is not moving. At the rear is a motor with worm and gear connection to a ratchet provided for adjustable intermittent rotation of the pump in delivery direction. Operation is controlled at a clutch lever which is depressed to produce one cycle of movement. A counter records each movement. Delivery is through a nozzle of suitable shape and size for a given application.

If you write maker identify as IEN - 10074

THREADING . . Reversing head drives taps from No. 10 to ½ inch

Source: BURG TOOL MFG. CO.
3741-45 Durango Ave., Los Angeles 34, Calif.

Positive drive

Jaw clutches integral with the upper and lower spindle gears in this new head provide positive drive for the tap chuck in forward and reverse directions. Drive direction is engaged and reversed without exerting axial pressure on the tap which is held by the rubber-flex tap chuck and is driven by its squared shank inside the chuck. Overall dimensions of the head are 2⅝ by 5⅞ inches. A suitable shank can be threaded into the ¾ in. drive opening.

Identify as IEN - 10075

Ace-Hide is a new American rubber-plastic pail for utility use that is both strong and tough. It is being employed with marked success in New York's subway yards and tracks because it also is an excellent non-conductor and can be swung against live third rails without electrically damaging its carrier. It applies also in handling corrosive materials. It can be hanged on finished surfaces without marring them.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10076

Courtesy Steel Cooperage Division of the Serrick Corp.

The versatility of De-Sta-Co Toggle Clamps is demonstrated by this unique welding fixture designed by the Steel Cooperage Division of the Serrick Corp. The fixture holds four rectangular and three round manifold flanges to an alignment plate during the inert arc welding operation. "V" type prongs replace one jaw on three of the 12 Model #468 portable clamps to give additional gripping area. The quick, positive holding pressure of the clamps cuts set-up time to a minimum and permits precise alignment of the manifold flanges. Rapid toggle action, sure holding pressure, ease of work removal and rugged durability make De-Sta-Co portable clamps the logical choice for this production application.

There's a De-Sta-Co Toggle Clamp engineered for your work holding problems in assembly, welding, bonding, machining or inspection of any material. Select from over 40 fixture and portable models. Positive holding pressures up to 4000 pounds. Write today for a copy of the De-Sta-Co catalog describing available stationary and portable toggle clamps.

DE-STA-CO DETROIT STAMPING COMPANY
342 Midland Avenue • Detroit 3, Mich.

If you write maker identify as IEN - 10077

"This Simplified Hose Clamp Offers 8 Cost-saving Advantages"

1. *Easier Installation . . . instantly*
2. *Easier Removal*
3. *Self-tightening . . . no adjustments needed*
4. *Positive Seal, even on irregular castings*
5. *No shellac needed*
6. *Rust and corrosion resistant*
7. *No sharp edges to cut or crush hose*
8. *No fasteners to get loose or bind*

Corbin Hose Clamps are available to fit hoses from ⅜" through 2½" O.D. . . . for rubber, plastic and fabric hose conveying air, gases or liquids. Make your own test. Send today for complete details. Corbin Hose Clamp Division, The American Hardware Corporation, New Britain, Connecticut.

CORBIN Self-Tightening HOSE CLAMPS

If you write maker identify as IEN - 10078

CLICK-RITE BLOCKS

- *CUTTING*
- *CLICKING*
- *DINKING*
- *CHOPPING*

CLICK-RITE is a fully guaranteed synthetic block that will protect your cutting dies and obtain cleaner cut pieces. APEX engineers have developed the tough, thermoplastic CLICK-RITE pad for all drop cutting machine operations.

CLICK-RITE blocks are non-dusting — non-chipping — and have a terrific resistance to abrasion. Cut costs with CLICK-RITE pads by APEX.

Ask about our 30 day trial offer — All sizes available. Immediate delivery.

APEX
APEX TIRE & RUBBER CO.
505 Central Avenue
Pawtucket, Rhode Island

If you write maker identify as IEN - 10079

only the BIL-JAX Maintenance TRESTLE gives you such VERSATILITY!

Gets your men up to any working level quickly, safely! Adaptable to any job, inside or out! Bridges obstacles, adjusts to uneven floors or stairways. Locking casters. Patented. U. L. approved. Designed especially for painting and maintenance work . . . its uses are unlimited.

Other Bil-Jax profit-makers include tower scaffolding, swing scaffolds, sidewalk bridges, ladder jacks, steel ladders . . . all of simple, sturdy design to give a lifetime of service, safety and satisfaction. Rent or buy. Distributors in principal cities.

Write for complete catalog. Address Dept. L-9

BIL-JAX, INC., Archbold, Ohio, U. S. A.

If you write maker identify as IEN - 10080

New INVINCIBLE "ALL SERVICE" Vacuum Cleaner

For Both Wet and Dry Recovery

Invincible "All Service" Model 50—½ H.P.

A frequent difficulty of vacuum cleaners with both wet and dry pickup is loss of efficiency due to humidity causing the filter bag to seal . . . *The advanced design of the new Invincible "All Service" entirely eliminates this problem!* After years of use, the new "All Service" will *continue* to operate at peak efficiency . . . The new Invincible "All Service" also has a *positive, automatic shutoff valve* in the water tank. It prevents messy overflowing that often damages the cleaner.

Write for complete information

INVINCIBLE VACUUM CLEANER MFG. CO.
DOVER, OHIO

If you write maker identify as IEN - 10081

AJAX Spiralwound Gaskets Breathe with varying Pipeline Stress

"spring-loaded"

How much "give" to a dead piece of metal? How much bounce to the ounce of asbestos? Very little!

But with Spiralwound, a "spring-loaded" preformed metal strip with an asbestos filler, you have a gasket that breathes with varying pipeline or boiler stresses. "The Spring is the Thing." It keeps joints tight at low bolt loads, seals irregular, pitted or warped surfaces, has enough resiliency, usually, to be used over again if the joint must be parted.

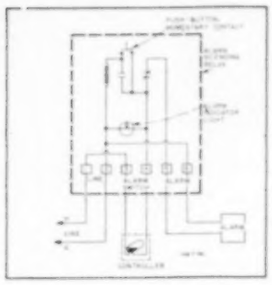
Get the spring-loaded multiple knife edge contacts of these gaskets to insure safe seals, always. Write for catalog or ask your favorite industrial distributor about them.

UNITED STATES GASKET COMPANY
FABRICATORS OF "TEFLON" & "KEL-F" FOR THE CHEMICAL PROCESS & ELECTRONIC INDUSTRIES
CAMDEN 1 NEW JERSEY

If you write maker identify as IEN - 10083

SIGNALING . . Silencing relay stops, resets control circuit alarm

Source: MINNEAPOLIS-HONEYWELL REGULATOR CO. 4456 Wayne Ave., Philadelphia 44, Pa.



Five amperes on 110 volts

Model ID002A1 is a new alarm silencing relay to mount in the circuit between a process control such as temperature, pressure, flow to an audible alarm. The new unit includes an indicator light and a momentary-contact silencing push button. This button assembles in the top of a relay housing that measures 4¼ by 3 by 5¼ inches. The signal light is in the face of the housing. A connection block is provided inside the housing for leads to a 110 or 220-volt ac. line to the controller and to the alarm.

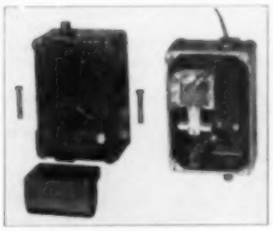
Closing the controller contact, when a predetermined signal point is reached, closes the indicator light circuit and energizes the alarm through the normally closed contacts of the relay. The alarm will continue to sound until an operator presses the push button on the housing to open the contacts to the alarm circuit.

The red light circuit remains closed even though the alarm is silenced until normal conditions have been restored and the controller circuit is opened. When this occurs the alarm circuit is reset and the light circuit is opened ready for the next signaling interval.

If you write maker identify as IEN - 10084

VALVE . . Solenoid operated for shut-off duty in fuel oil line

Source: VIKING MACHINERY SALES CORP. 203-7 O'Brien Road, Jackson, Mich.



$50 complete

Operating solenoid for this new fuel oil shut-off valve is mounted in vertical position in a weather-proof housing. It is connected by lever and shaft to the valve which mounts on the back of the housing in horizontal position. The valve stands normally closed when the solenoid circuit is open. Closing this circuit lifts the solenoid armature and opens the valve for free flow where it holds as long as the circuit remains closed.

Operation can be specified on 110 to 440-volt 60-cycle ac. to handle 100 to 150-lb. oil pressure. A manifold heater to employ hot oil or steam is available to attach to the bottom of the valve housing for application in lines handling heavy oils. Overall dimensions with the heater manifold in place are 7 by 8 by 11 inches.

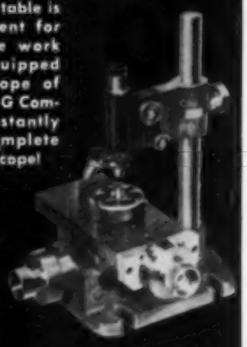
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10085

E & G COMPOUND BASE
where precision means business!

6" lateral and 4" transverse continuous micrometer motion, with ZEROING dial reading direct to 1/10,000".

This versatile work table is standard equipment for precision machine work and inspection. Equipped with the microscope of your choice, the E & G Compound Base is instantly converted to a complete Toolmaker's Microscope!



Also available with our E & G Rotating Table for angular measurements.

For literature, write direct to manufacturer.

ERB & GRAY
854 South Figueroa St., Los Angeles 17, Calif.

If you write maker identify as IEN - 10086

Proper annealing assured by exact timing

● Because the heat treatment of castings requires accurate timing, this Eastern producer installed a Cyclone Flat Wire Belt to carry them through the annealing operation. The regulated speed of the belt (by use of sprocket drive)—and its large open areas—allow the maximum amount of heat to reach all parts of the castings for exactly the right period of time. Just recently the original belt was replaced after several years' operation . . . definite proof that Cyclone belts give long service under rugged conditions.

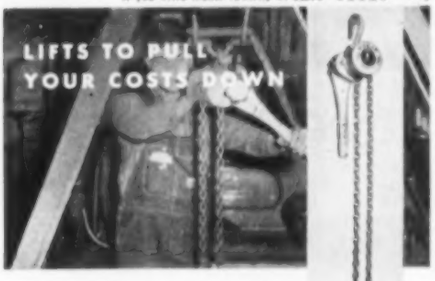
Cyclone Conveyor Belts are available in three types—Flat Wire, Spiral Woven and Flex-Grid. For information and advice on their installation get in touch with our nearest sales office and write Dept. C-92 for our catalog #4.

U·S·S CYCLONE
METAL CONVEYOR BELTS

CYCLONE FENCE DEPT.
AMERICAN STEEL & WIRE DIVISION, UNITED STATES STEEL COMPANY
WAUKEGAN, ILLINOIS

UNITED STATES STEEL

If you write maker identify as IEN - 10087



'Tugit' is the world's handiest portable tool for plant maintenance, service truck and construction crews. It stretches wire and cable, handles machinery and pipe, and does thousands of awkward, lifting, shifting, erecting, and dismantling jobs. Saves effort, time, and money.

The versatile 'Tugit' Hoist is built in one and two-ton sizes. It fits any tool box. Compactness, light weight, and powerful geared lever action make the 'Tugit' easy to operate at any angle, even in tight quarters. Spots one-ton loads as close as 1/16 of an inch. Write for Bulletin No. 388, which gives all details.

'TUGIT' HOISTS

MANNING, MAXWELL & MOORE, INC.
MUSKEGON, MICHIGAN

Builders of "Shaw-Box" Cranes, 'Budgit' and 'Load Lifter' Hoists and other lifting specialties. Makers of 'Ashcroft' Gauges, 'Hancock' Valves, 'Consolidated' Safety and Relief Valves, and 'American' Industrial Instruments.

If you write maker identify as IEN - 10088

MIRACLE REINFORCEMENT BASE ADDS YEARS TO FLOOR LIFE!

Workmen installing Klemp Floorsteel Flexible Floor Armor for reinforcement of concrete surface

● MINIMUM UPKEEP
● RUGGED
● SAFE

Floorsteel Rolls Out Like A Rug!

FLOORS STILL IN PERFECT CONDITION AFTER MORE THAN 25 YEARS! . . .

KLEMP HEXTEEL® or FLOORSTEEL®

REINFORCED (AND INSTALLED) INDUSTRIAL FLOORS

Klemp Hexteel or Floorsteel solve once and for all the problem of solidity, smoothness, and upkeep of any floor daily subjected to the hardest, most wearing assaults of trucks bearing materials of great weight. Fabricated of heavy-duty steel grid flooring material, they are scientifically designed to be filled with concrete or mastic on old or new floors (either wood or concrete). When filled, they make a solid one-piece, rigid, smooth, and seamless mat over the entire floor area, so that the tread of the wheel is always on steel.

IMPORTANT: Before installing—Insure longer floor life and maintenance savings by consulting Klemp engineers who will gladly help you (without obligation) to make a thorough study of your flooring problems.

Send for your free copy of the informative booklet, "Instructions for laying Klemp Hexteel and Floorsteel."

KLEMP METAL GRATING CORP.
Executive Offices: 1071 North Branch Street, Chicago 22, Illinois

If you write maker identify as IEN - 10089

Every roll sealed in cellophane stays factory-fresh. Ask your dealer for this handy package of the tape that goes further, wraps right, lasts longer. Jenkins Bros. (Rubber Div.), 100 Park Ave., New York 17.

JENKINS Gold Seal Tape FRICTION RUBBER

MADE BY JENKINS BROS MAKERS OF FAMOUS JENKINS VALVES

If you write maker identify as IEN - 10090

Super-Silvertop STEAM TRAPS

SPEED UP

- Trap Servicing
- Trap Installation

You can inspect and clean a Super-Silvertop much faster than ordinary inverted bucket traps for you never have to remove the trap from the line. Super-Silvertops have all inlet and outlet connections in the head of the trap . . . give easy access to the inside. This permits you to install the trap as an elbow or straight in line without the use of extra fittings and labor. Investigate these advantages today.

THE V. D. ANDERSON COMPANY
1921 West 95th St. • Cleveland 2, Ohio

Super-Silvertop Steam Traps
Anderson Strainers Hi-vac Purifiers

If you write maker identify as IEN - 10091

The new Slotted-Type "Place" Bolt as made by "CLEVELAND"

(Licensed under U.S. Patent No. 2543725)

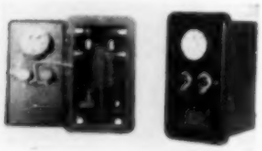
Economical in cost and use, Place Bolts have broad application possibilities in vibration point assembly. One piece, self locking. Tough cold-forged strength. Re-usable. Write for folder on "Cleveland" Place Bolts.

CLEVELAND Top Quality FASTENERS
The Cleveland Cap Screw Company
2817 East 79th Street Cleveland 5, Ohio

If you write maker identify as IEN - 10092

METER . . Reads differential voltage as a function of a process variable

Source: GENERAL ELECTRIC CO.
Dept. 6X-201, Schenectady 5, N. Y.



Ask for Bulletin GEC-892

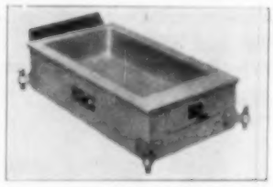
Current, speed, pressure and other process variables that can be converted to voltage are measured and indicated on this new differential voltage meter. It consists of a voltmeter containing an electronic amplifier and a self-balancing circuit. It is capable of measuring a 0.001 to 30 volt differential of two input voltages ranging from 1 to 400 volts providing they do not differ by more than 300 to 1. The instrument can be set to indicate full scale for a voltage as small as 0.022 volts. The scale can be marked in volts or in terms of a desired process variable.

Application can be made with equipment such as a recorder, an indicating instrument or an alarm relay. Typical use is on a paper machine to measure "draw" at the wet end, defined as the differential speed between adjacent sections. This helps an operator to thread the machine and minimizes paper breakage. Similar applications can be made in textile, rubber and chemical plants.

If you write maker identify as IEN - 10093

MELTING . . Electric pot to dip solder large assemblies

Source: DEE ELECTRIC CO.
1103 N. Paulina St., Chicago 22, Ill.



Thermostat built in

Inside dimensions of this new Model-85 soldering pot are 12 by 6 by 2¼ inches. Outside dimensions are 14½ by 8 by 4 inches. Heat is supplied by electric elements embedded in ceramic. Temperature control is by a thermostat.

Adjustable legs permit leveling the pot on a bench or table. The detachable tray at one end receives dross scraped into it. Operation is on 110 volt ac. with input at 980 watts. Temperature range is 450 to 700 deg. F.

Identify as IEN - 10094

Forecast for industry's capital spending plans in the period 1952 through 1955 is made by McGraw-Hill Publishing Company. The 12-page report on the subject has been prepared by the company's Department of Economics. It indicates that 1952 will be the peak after which mobilization expansion will have passed its point of maximum spending but that industry's expansion plans will remain high for some time to come. Tables show what the companies are spending, what they will spend, what they plan ahead, how they expect to raise the money required for expansion.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10095

"Custom" Features IN ECONOMICAL STANDARD STEEL LOCKERS

penco

Penco gives you a *choice* of 337 combinations of *standard* locker types, sizes and design variations—permitting maximum flexibility in locker room planning! Have your own "custom-type" installation at *standard* cost! Locker catalog No. L-100 shows how. Send for it now!

Penco Single Tier Lockers with slope tops and closed bases—boost employee morale, promote locker room cleanliness!

Founded 1869 by E. Lewis Sugenderger

PENN METAL Corporation of Penna.

80 OREGON AVENUE, PHILADELPHIA 48, PA.

If you write maker identify as IEN - 10096

If You Have A FACTORY PROBLEM In Production, Assembly, Packaging, Shipping

You Can Save Time and Money By Using

SEAMLESS F.O.S. INDUSTRIAL TAPE

CALL OR WIRE

collect for complete information, prices, catalogues, free samples. Tape to meet government specifications. Wire details collect for 24-hour reply.

"Originators of Pressure-Sensitive Industrial Tape"

75th Anniversary

WIRE INDUSTRIAL TAPE DIV. H

THE SEAMLESS RUBBER COMPANY
NEW HAVEN 3, CONN., U. S. A.

If you write maker identify as IEN - 10097

IMMEDIATE DELIVERY From Stock

fully armored all-metal FLOWRATOR meters

Fig. 52 Flowrator Meter equipped with Magnabond pneumatic transmitter.

Delivery right from Fischer & Porter stock in Chicago, Dallas, Los Angeles and Hatboro means much to you.

Now you can have the wide range, linear scale Fig. 52 all-metal meter quickly in 150 lb. and 300 lb. ratings in steel or 316 stainless. These meters are complete meters and not just metering elements, are low in price and may be equipped with Magnabond pneumatic transmitter (illustrated) or all-metal magnetic indicators which are regularly stocked. Six sizes in FLOWRATOR Meters will cover a capacity range from a *fraction* of a GPM (or SCFM) to 240 GPM (or 850 SCFM). Each meter, with Stablvis float, has a viscosity immunity well above that found in orifice practice.

Further, Fig. 52 meters can be changed for different applications—right in the field—by use of the information contained in the F & P Variable Area Handbook.

If you would like further information on Fischer & Porter Flowrator Meters—or a free copy of the Variable Area Handbook, use the Reader Service form provided.

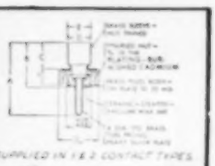
5 DISTINCT FEATURES:
- One moving part, no stuffing box
- Wide rangeability
- Viscosity immunity
- Linear calibration
- Safe, all-metal construction

FISCHER & PORTER CO.
1990 COUNTY LINE ROAD
HATBORO, PENNA.

1740

If you write maker identify as IEN - 10099

Ideal for
ANTENNA CONNECTIONS
PHOTO-CELL WORK
MICROPHONE CONNECTIONS



SUPPLIED IN 1 & 2 CONTACT TYPES

JONES
SHIELDED TYPE
PLUGS & SOCKETS

LOW LOSS PLUGS AND SOCKETS FOR HIGH FREQUENCY CONNECTIONS

For quality construction throughout, and fine finish, see diagram above.

101 Series furnished with 1/4", .290", 3/16", 3/8", or 1/2" ferrule for cable entrance. Knurled nut securely fastens unit together. Plugs have ceramic insulation; sockets bakelite. Assembly meets Navy specifications.

202 Series Phosphor bronze knife-switch type socket contacts engage both sides of flat plug contacts—double contact area. Plugs and sockets have molded bakelite insulation.

For full details and engineering data ask for Jones Catalog No. 18.

JONES MEANS PROVEN QUALITY

P-202-CCT

P-101-14

S-101

S-202-B

HOWARD B. JONES DIVISION
CINCH MANUFACTURING CORPORATION
CHICAGO 24, ILLINOIS
SUBSIDIARY OF UNITED-CARR FASTENER CORP.

If you write maker identify as IEN - 10100

Moving or Storing is Rapid, Convenient and Inexpensive with
IRONBOUND SEMI-LIVE SKID PLATFORMS

Ruggedly built with capacities up to 2500 lbs. These units are quickly made mobile with the use of low cost lift jacks . . . One of the methods that Ironbound engineers use to increase production and conserve space at low cost.

SEMI-LIVE SKID WITH BOX TOP

. . . permanently attached or removable. Also available with many other superstructures to "Short-Haul" your products thru production or into storage. Useful in hundreds of spots in every plant.

THE IRONBOUND "SAFETY-SKID" WITH ROUND CORNERS

Ironbound construction assures long hard use with complete safety to product and operator. Still the time proven method for handling of materials efficiently and economically.

Ironbound

IRONBOUND
BOX & LUMBER COMPANY
Materials Handling Division
50 HOFFMAN PLACE • HILLSIDE, N. J.

MANUFACTURERS OF QUALITY BUILT SKIDS, SEMI-LIVE SKIDS, FLOOR TRUCKS, ROLL TRUCKS, DOLLIES AND PRY BARS

If you write maker identify as IEN - 10101

Now! A high speed rotary tool that
CUTS ALUMINUM AND MAGNESIUM
faster and without loading

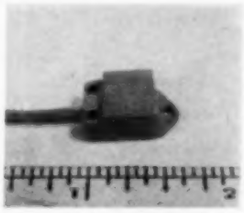
Write for details and prices!

M. A. FORD MFG. CO. INC.
705 West River Street, Davenport, Iowa

If you write maker identify as IEN - 10102

TESTING . . Accelerometer to measure vibration and shock loading

Source: KINEMATICS LABORATORY
1226-30 Hazel Ave., Plainfield, N. J.



Secures to test surface

Model 100-C is a new sub-miniature accelerometer designed to mount on a structure so vibration or shock movement in the structure will be at right angles to its base. It connects electrically to a suitable vacuum tube voltmeter and, if also required, to an oscilloscope for amplitude and wave form studies.

The accelerometer acts as an ac. generator when it is exposed to vibration to produce three millivolts per unit of gravity. It is suited for application in an acceleration range between 0.1 and 600 G. Its weight is about 1 gram. Its dimensions are 1/2 by 1/4 by 1/8 inch.

If you write maker identify as IEN - 10103

CLEANING . . Chemical solvent to flow and brush on machinery parts

Source: CURRAN CORP.
752 S. Canal St., Lawrence, Mass.

Diethyleneglycol-monoethylether

Flo trade names new chemical solvent supplied in liquid form in 50-gal. drums to remove grease from machinery parts in production and in maintenance operations. The solvent is relatively odorless, safe to use. It will not de-fat the skin. It dries quickly without leaving a film or sticky residue. Cutting action is quick. Evaporation is clean. The liquid is non-corrosive and harmless to liquid phase solvent machines.

If you write maker identify as IEN - 10104

THREADING . . Chuck for small taps mounts on company's reversing head

Source: COMMANDER MFG. CO
4221 W. Kinzie St., Chicago 24, Ill.

Finger tip Control

Small taps, subject to breaking, can be "felt" into and out of the work by application of this new tapping chuck on the company's reversing tap-driving head, previously described IEN-197-48. The head provides the power to drive and reverse the tap. The chuck provides axial movement within itself to a maximum of 3/4 inch. It is engfiged and disengaged by moving a knurled collar through a small arc by finger tip pressure. Tap breakage is minimized since the operator has complete control and can instantly reverse the tap before it can be over-stressed.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10105

BALL BUSHING

Sliding linear motions are nearly always troublesome. Thousands of progressive engineers have solved this problem by application of the Precision Series A or Low-Cost Series B BALL BUSHINGS.

Alert designers can now make tremendous improvements in their products by using BALL BUSHINGS on guide rods, reciprocating shafts, push-pull actions, or for support of any mechanism that is moved or shifted in a straight line.

Improve your product. Up-date your design and performance with BALL BUSHINGS! Now manufactured for 1/4", 5/16", 3/8", 1/2", 5/8" and 3/4" shaft diameters.

THOMSON INDUSTRIES, INC.
Depot 3 MANHASSET, NEW YORK
Write for descriptive literature and the name of our representative in your city.

The BALL BEARING for your
LINEAR MOTIONS

LOW FRICTION • LOW MAINTENANCE
ELIMINATES BINDING AND CHATTER
SOLVES SLIDING LUBRICATION PROBLEMS
LONG LIFE • LASTING ALIGNMENT

PROGRESSIVE MANUFACTURERS USE BALL BUSHINGS—A MAJOR IMPROVEMENT AT A MINOR COST

If you write maker identify as IEN - 10106

NEW! **DODGE**
SLIDE-SET VISE

Cut away view

SLIDES IN "NEUTRAL"!
INSTANT ACTION!
GRIPS CONVENTIONALLY!
FULL POWER!

● Entirely new in principle, with patented fast slide action that speeds work, reduces operator fatigue, saves wear on parts. All the power of a heavy conventional vise (weighs 58 pounds). Jaw slides in "neutral" before you lock it by turning handle in conventional way. No tedious "spinning" in and out. No-Pinch handle protects against blood blisters. Every Dodge Slide-Set pays dividends in greater efficiency and production. *Write now for free Bulletin.*

Dodge Manufacturing Corporation, 600 Union St., Mishawaka, Indiana

DODGE
of Mishawaka, Ind.

If you write maker identify as IEN - 10107

FAST

KESTER FLUX-CORE SOLDER

FAST **in Obtaining Wanted Results**

Only Kester has the proven ability to give you the exact percentage of flux content needed for your particular soldering operations.

Free Technical Manual: **Send for your copy of "SOLDER and Soldering Technique" today.**

KESTER SOLDER COMPANY
4211 Wrightwood Ave., Chicago 39
Newark 5, New Jersey • Brantford, Canada

KESTER SOLDER

If you write maker identify as IEN - 10108

HYSTER® *Turret Trucks*
handle materials faster . . . cheaper

Fast horizontal transporters... for loads up to 4000 pounds. Hyster Turret Trucks go anywhere man-pulled or power-driven "walker-controlled" trucks can go. They operate an average 8-hour shift on a gallon of gasoline.

Anyone can operate — great maneuverability. Fully automatic clutch and transmission. No gear shifting. No levers. Tight quarters, narrow aisles and ramps are no problem. 360° steering is done through drive wheel. Truck "inches" along or goes 8 MPH fully loaded; 10-12 MPH empty.

Low purchase cost. One of the lowest priced, self-propelled materials handling trucks—in line with most "walker-controlled" units.

See your Hyster dealer, or write for literature. 4 models — PALLET . . . PLATFORM, CARGO and TUG.

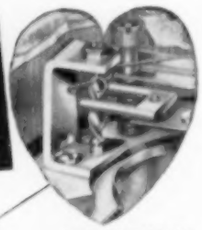
HYSTER COMPANY
THREE FACTORIES
2916 N. E. Clackamas, Portland 8, Ore.
1874 North Adams St., Peoria 1, Illinois
1014 Myers Street . . . Danville, Illinois

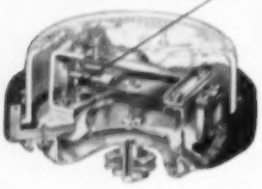
If you write maker identify as IEN - 10109

Only

DWYER MAGNEHELIC GAGE has the ultra-sensitive "MAGNETIC LINK"

Not subject to surge or vibration damage





EXCEPTIONALLY VALUABLE FOR MEASURING

- Filter Resistance
- Air Velocity
- Furnace Drafts
- Static Pressures
- Gas Pressures
- Checking — Flow meters, control equipment, automatic valves, gas-air ratio controls, etc.

The exclusive "Magnetic Link" is a Dwyer Development offering extreme sensitivity, low cost and a ruggedness that makes the Magnehelic Gage ideal for portable, as well as stationary, use. Long life and trouble-free operation is assured. Ranges from 0-1" of water to 0-2 psi.

Request Bulletin No. 250

F. W. Dwyer Mfg. Co.

307 SOUTH WESTERN AVENUE • CHICAGO 12, ILLINOIS

If you write maker identify as IEN - 10110

PLAIN-END PIPES JOINED *without threading*

(2 MAN-MINUTES PER BOLT)

The quick, easy, economical way to join plain-end pipes *permanently*. And a wrench is the only tool you need. Dresser Style 38 Steel Couplings give you permanent "Flexible-Tightness" against expansion-contraction stresses . . . stay tight for years of rugged, dependable service. Available for sizes ¾" ID to 22" OD for steel and cast iron pipe.

DRESSER couplings

Dresser Manufacturing Division, 59 Fisher Ave., Bradford, Pa. (Use of the Dresser Industries) Warehouses 1121 Rothwell St., Houston, Texas; 101 S. Harbor Boulevard, South San Francisco, California.

If you write maker identify as IEN - 10111

Eliminate Pipe Corrosion Problems with Easy-to-Install

CLOW (THREADED*) **CAST IRON PIPE**

CLOW CAST IRON PIPE CAN BE

on the job with ordinary tools of the piping trade

WHETHER YOU ARE BUILDING, EXPANDING or replacing, consider the experience of leading architects and plumbing contractors . . . CLOW *threaded** CAST IRON PIPE is now their choice for all 3" and larger downspouts, waste and vent lines. They know that its corrosion-resisting qualities and long-life durability assure permanent, trouble-free service.

CLOW *threaded** cast iron pipe can be cut and threaded with ordinary tools of the trade . . . Available with plain or threaded ends: 18' lengths, sizes 3, 4, 5, 6, 8 and 10" . . . also with integral calking hub (other end plain) in 18' lengths and in sizes 4, 6 and 8".

Write for Form 4-26-50 to: JAMES B. CLOW & SONS, 201-299 North Talman Avenue, Chicago 80, Illinois.

*Has the same outside diameter as steel or G. W. I. pipe

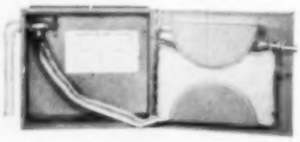
JAMES B. CLOW & SONS

Wholesale Distributors of Pipe, Valves and Fittings for Industrial Use

If you write maker identify as IEN - 10112

EXTINGUISHING . . Fire hose station stores ¾-in. linen hose and nozzle

Source: W. D. ALLEN CO.
564-68 W. Lake St., Chicago 6, Ill.



$31 to $50 with hose

Local areas are protected by installation of this new Allenco fire hose station on a wall with connection to a water line. Knock-outs are provided at 4 corners of the 20-gage steel housing for a pipe inlet. There is ample space inside the housing to install a suitable valve. The assembly is fitted with 30, 40, 50 or 75 ft. of ¾-inch linen hose and a permanently applied hose nozzle and coupling.

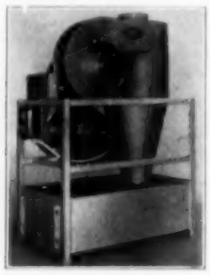
The hose is racked on the hinged door which is held closed by a recessed ring type latch. When the door is opened and swung outward on its piano type hinge the hose immediately becomes accessible and can be put into service as soon as the valve is opened.

Two housing sizes measure 14 by 4 by 12½ and 15½ inches. Equipment includes a decalcomania reading "fire hose" in letters 1½ in. in height on a 2½ by 9 in. panel.

If you write maker identify as IEN - 10113

DUST COLLECTING . . Blower and centrifugal separator, 3,630 cfm.

Source: AGET-DETROIT CO.
401 Main St., Ann Arbor, Mich.



Stock assembly

Model 30ND50 is a new assembly of stock parts to include a centrifugal blower, a belt connected 5 hp. motor, a centrifugal separator, dirt collecting compartment and a structural frame duplicating the larger Dustkop unit, previously described IEN 6711-52. The equipment rates 3,630 cfm. at 6 in. of static suction on an 8 in. diameter inlet.

Dust, lint, chips developed in various operations are separated from the air stream on the outlet side of the blower. They fall into the 12 cu. ft. compartment in the base for removal at intervals. Air issues from the opening at the separator top for normal connection outdoors. Operation is on 220 or 440 volt 3 phase 60 cycle ac.

Identify as IEN - 10114

Railroaders, professional and otherwise, will be interested in Union Switch & Signal's new booklet on retarder speed control and automatic switching for "hump" yards. They also will like the new folder on the "Informer" system for automatically recording Pullman train space reservations.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10115

JABSCO *SELF PRIMING* **PUMPS**

Patented and Patents Pending

the pump with the DUPONT NEOPRENE impeller (oil resistant)

BRONZE, STAINLESS STEEL & IRON CONSTRUCTION —CAPACITY TO 50 GALLONS PER MINUTE

1. **MORE CAPACITY**—for its weight, size and price.
2. **SELF-PRIMING**—starts instantly with high suction lift.
3. **ONE MOVING PART**—tough, long-lived.
4. **GEARLESS**—impeller outlasts metal gears.
5. **TROUBLE FREE**—simple construction.
6. **ECONOMICAL**—low cost — low maintenance.

LIQUID TRANSFER AND CIRCULATING FOR ALL INDUSTRIES

JABSCO PUMP COMPANY

2031 N. Lincoln Street • Burbank, California

If you write maker identify as IEN - 10116

MERRILL **MATERIALS HANDLING** DEVICES

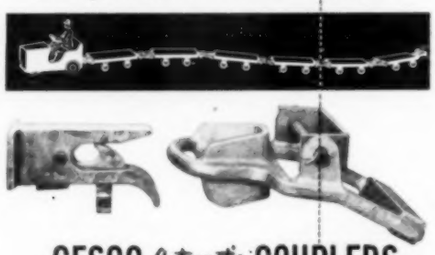
3-46-2

MERRILL BROTHERS

56-14 ARNOLD AVENUE MASPETH, N. Y.

If you write maker identify as IEN - 10117

for platform trucks and trailers



CESCO *Automatic* **COUPLERS**

COUNTER BALANCED

THEY COUPLE AT ANY TRUCK ANGLE because the counterbalanced bail is always in coupling position; is easily disengaged by foot-operated latch. The spring-loaded jaw and counterbalanced bail provide complete flexibility for single trucks or truck trains.

Cesco Automatic Couplers may be welded or bolted to truck frames; are interchangeable with other makes. Write for information and prices.

Colson Equipment & Supply Company

1917 WILLOW STREET • LOS ANGELES, CALIFORNIA

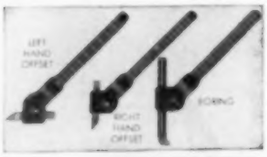
If you write maker identify as IEN - 10118

WALTON-AMERICAN Tool Holders

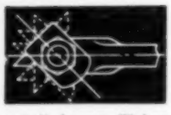
Hold with a perfect grip, tool bits, or boring bars in all sizes from ⅛" to 7/16", square or round. Besides gripping the tool securely top and bottom, it is held so that no lateral motion is possible.

VERSATILE MULTI-POSITION

The Walton-Americans are adjustable to bit size, and to any cutting position. All changes may be made at the machine without additional heads or set screws.



One Walton-American can be used in straight and right or left hand offset positions, or any other position around an entire circle (see illustration). Economy is doubly assured for very short bits may be used, and jaws will not break high speed steel or Stellite bits.



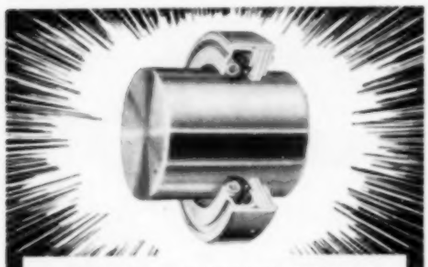
OTHER WALTON PRODUCTS—The well known *Walton Tap Extractor* for removing broken taps; and *Reps Pipe and Stud Extractor* for removing broken pipes, studs and screws (a product of Walton's affiliate, Reps Tool Company, Inc.).

Send for complete catalog No. 15 of all Walton Tools.

THE WALTON COMPANY

HARTFORD 10, CONNECTICUT

If you write maker identify as IEN - 10119



AMERICAN FELT REALLY SEALS!

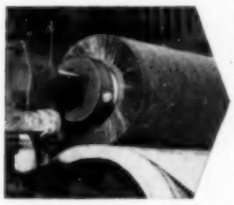
Above is an OilFoil seal, consisting of two layers of felt, bonded with two septums of Hycar, the synthetic rubber-like substance that is impervious to and unaffected by oils, greases, and the hydrocarbons used in hydraulic systems. Such washers can have one, two, or three septums, to keep lubricants in and seal out water, dirt, gases and retain pressures. If there is no lubricant in the enclosure, the felt can be impregnated with oil or grease, to provide lifetime bearing lubrication. OilFoil seals are supplied cut to exact dimensions, ready for assembly, and usually require no attention between major overhauls. For more information, write for Data Sheet No. 11, "Felt Seals, Their Design and Application." Free.

American Felt Company
TRADE MARK
16 GLENVILLE ROAD GLENVILLE, CONN.

If you write maker identify as IEN - 10120

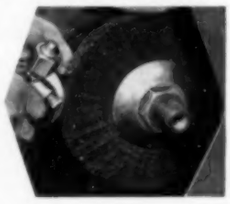
How Pittsburgh Brushes SPEED PRODUCTION

1. Removing oil film from steel!



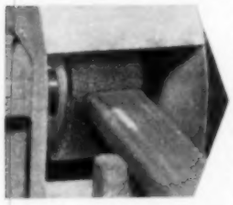
Crown Cork & Seal Co., Inc., asked Pittsburgh engineers to recommend a brush suitable for washing oil film from steel before annealing. A "built-up" brush made of Tampico sections was installed. Oil and foreign matter were completely removed without harming the surface of the steel. Production showed an immediate increase, and time saved due to fewer brush replacements added to the overall savings.

2. Satin-finishing brass fixtures!



Frequent breakdowns and brush changes hampered Bastian-Blessing Company's production of satin-finish parts for its products. Pittsburgh engineers recommended a crimped steel, standard 10" brush. Reports after three years' use show Pittsburgh Brushes have increased production, improved quality and saved materials . . . while lasting *three times longer* than previous brushes!

3. Removing burrs from steel!



Problem: The National Electric Company needed a brush to eliminate burrs and scale, yet the brush had to combine cleaning ability with long life. Solution: Pittsburgh designed a brush to specifications—a brush that was stiff and tough enough to penetrate, clean, and remove burrs and scale, and rugged enough to stand up. Result: An increase in efficiency; a jump in production!

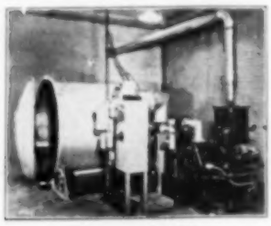
Let Pittsburgh Engineers Solve Your Brush Problems. Pittsburgh's complete line of brushes of every type, for every purpose, will provide a practical and economical solution of any brush problem you might have. Drop us a line on your company letterhead for a copy of our new booklet that shows, through actual case histories, how Pittsburgh brushes help cut your operating costs. Address: PITTSBURGH PLATE GLASS COMPANY, *Brush Div.*, Dept. M-5, 3221 Frederick Ave., Baltimore 29, Md.

PITTSBURGH
Power Driven
BRUSHES
BRUSHES • PAINTS • GLASS • CHEMICALS • PLASTICS
PITTSBURGH PLATE GLASS COMPANY

If you write maker identify as IEN - 10122

PLATING . . Vacuum equipment deposits mirror surface on reflectors

Source: NATIONAL RESEARCH CORP.
72 Memorial Drive, Cambridge 42, Mass.



About $40,000

A new tank measuring 5½ ft. in diameter and vacuum equipment consisting of two 16-in. diffusion pumps, two 6-in. booster pumps and a 200-cfm. mechanical roughing pump make up a new assembly of vacuum plating equipment. It is particularly suited to deposit bright aluminum on products such as lamp reflectors to eliminate the need to polish aluminum or use chromium bright finishes.

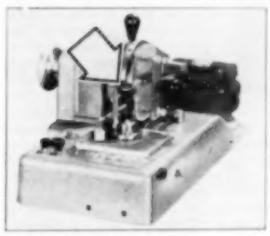
Reflectors to be coated are mounted in wheel type fixtures on a large wheel type assembly that fits inside the tank and permits the door at the end to be closed and sealed. The pumps are then started and operated for 15 to 20 min. to evacuate the interior. This is followed by a 2 to 3 additional minutes to complete the process for a plate thickness of 0.000005 inch.

Operation is based upon the fact that metal, vaporized in a high vacuum, will travel in a straight line until it strikes an obstruction where it will condense on the surface. The coating metal, aluminum in the case of the reflectors, is vaporized from a series of resistance coils suspended along the central axis of the chamber. The work pieces are mounted on rotating fixtures so they will move uniformly into the radial path through which the vaporized metal is traveling.

If you write maker identify as IEN - 10123

WINDING . . Toroidal coil machine mounts shuttle with 1 ounce of wire

Source: GEO. STEVENS MFG. CO.
Peterson at Pulaski Road, Chicago 30, Ill.



Counter totals turns

Coils as small as 0.187 in. in finished inside diameter can be made on this new Model TW-A machine. It can be adjusted to wind any segment or arc to 345 degrees, placing the wire in layers and automatically reversing at each end of the arc. Larger coils can be produced with additional winding heads. The head can be moved forward or back in an arc and from left to right to position the shuttle as required for a given coil.

Wire sizes from 24 to 41 can be handled on the 5-in. shuttle which holds 1 oz. of wire. Each machine is provided with one De-Reeler tension for wire spools to 6 in. in diameter. Following a slow start, to prevent breakage of fine wire, the machine can be brought up to a speed of 800 turns per minute. Drive is by a ¼-hp. 110-volt ac. motor. Overall dimensions are 24 by 14 by 11½ inches.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

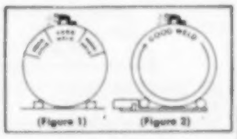
If you write maker identify as IEN - 10124

If you write maker identify as IEN - 10125

SPENCER THERMOSTAT
Division of Metals & Controls Corporation
2104 FOREST ST., ATTLEBORO, MASS.
KLIXON

If you write maker identify as IEN - 10126

How Worthington Turning Rolls insure BETTER WELDS



(Figure 1) (Figure 2)

Designed for use in welding cylindrical vessels of any size, Worthington Turning Rolls will insure the best possible weld while lowering costs and increasing footage up to 50%.

The above sketches show how. Unless work is turned continuously, good downhand welding is obtainable only in a small area (Fig. 1). With a Worthington Turning Roll, downhand welding is assured for the complete circumferential seam (either by manual or automatic welding) (Fig. 2).

Write for Bulletin 210-D. Worthington Corporation, Plainfield, New Jersey.

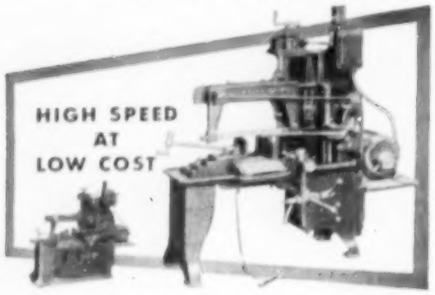
Y.2.2

WORTHINGTON
Welding Positioners—Turning Rolls

If you write maker identify as IEN - 10127

CORDS LTD.
Division of Essex Wire Corporation,
121 DODGE STREET
DE KALB, ILLINOIS
WIRE SX PRODUCTS

If you write maker identify as IEN - 10128



For tool room, stockroom, or maintenance shop, this 6" x 6" capacity hack saw is ideal when you want speed, accuracy, and economical operation at lowest possible investment.

Embodies similar design principles and features of MARVEL heavier duty production saws. Its shaper-link action that provides quick return stroke, and its heavy pressure screw feed are two exclusive MARVEL features that provide FASTER cutting than can be obtained with any other metal saw in its price class.

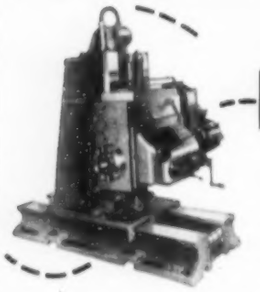
Single speed, 2-speed, and 4-speed models are available, to suit all types of applications where materials of different hardness and alloy characteristics are to be cut. Cabinet base or open-leg base are optional.

Metal Cutting MARVEL SAWS
Better Machines—Better Metal

ARMSTRONG-BLUM MFG. CO.
"The Hack Saw People"
5700 Bloomingdale Ave. Chicago 39, U.S.A.

If you write maker identify as IEN - 10129

FORNEY
BORING and FACING MACHINE



★ Boring
★ Facing
★ Milling
★ Tapping
★ Drilling

WRITE FOR NEW BULLETIN

Designed to eliminate conventional overhang for necessary bar travel providing greater resistance to bending stresses when boring — greater rigidity when milling — increased capacity when facing. Numerous applications can be made in boring, facing, drilling, tapping and milling. Duplicator attachments available. Standard model weighs 10,000 pounds.

FORNEY'S INCORPORATED
Manufacturers of Special Machinery Since 1910
ELM ST NEW CASTLE, PENNSYLVANIA

If you write maker identify as IEN - 10130

Accurate BATCH METERING with NIAGARA VISIBLE DIAL METERS

Just set the dial on zero before each delivery and get highly accurate batch measurement of liquids—with no fear of inaccuracies through errors in reading. Niagara Visible Dial Meters are available in a wide range of sizes for liquids of all types. Choice of vertical dial with hands or setback figure rollers.

Fill out the coupon with your particular requirements and let us help you solve your batch metering problems—today.

Please send me full information on use of Niagara Liquid Meters for:
Liquid .....
Temp. ..... °F. Pressure ..... p.s.i.
Flow rate ..... g.p.m.
Maximum Batch ..... gals.
Company .....
By .....
Address .....

BUFFALO METER CO.
2929 MAIN STREET
BUFFALO, N. Y.

If you write maker identify as IEN - 10131

HEATING . . Electric furnace for laboratory carbon determinations

Source: HEVI-DUTY ELECTRIC CO.
4210-14 W. Highland Blvd., Milwaukee 1, Wis.

Ask for Bulletin LAB-552

Inside dimensions are 1¼ by 12 in. in the company's new 70-T and 77-T hinged and solid type tube furnaces. Both are designed for working temperature to 1,800 deg. F. steadily or to 1,200 deg. F. for short intervals. Intended application is primarily in laboratories for carbon determination, organic analysis and special research. Input is at 750 watts for Type 70-T and 600 watts for Type 77-T. Both operate on 110 or 220-volt ac. or dc.

Heat is supplied through a tap-changing transformer that provides 36 steps of temperature control. The transformer is mounted in the pyramid type base to make the furnace and controls a single unit. The heating elements consist of helical coils of nickel-chromium wire inserted replaceably in undercut grooves of semi-cylindrical refractories.

If you write maker identify as IEN - 10132

DUST COLLECTING . . Venturi unit catches dust at a grinding machine

Source: VULCAN TOOL CO.
720 Lorain Ave., Dayton 10, Ohio

Vulcanaire

Intake funnel, suction hose and a metal cup comprise three major parts of this new dust collector for installation on a grinding machine. The cup is equipped with a venturi connecting to a shop source for air pressure. The cup also encloses a filter section made up of fine brass wire. Air, employed in the venturi to set up suction at the intake funnel, passes through the brass wire. The grinding dust is caught and retained to be emptied at intervals. Operation is controlled at a needle valve at the point where air supply connects to the cup. This valve can be closed so no air is wasted when the grinding machine is not operating in service.

Two sizes are known respectively as Series 200 and Series 700. They provide 24 and 56 cu. in. of capacity for grinding wheels 2 in. in diameter or less and 7 in. in diameter or less.

Identify as IEN - 10133

Fenwal thermostat, known as a Thermo Switch, is built into the sealing platens of an automatic machine that packages material such as tea, granulated sugar in heat sealed plastic containers which it forms, fills, seals, cuts off and delivers at the rate of 80 to 100 cycles per minute. The thermostat is sensitive within 0.1 deg. F. It measures about 5 in. in length by ⅝ in. in diameter and is not affected by mechanical shock.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10134

AUTOMATIC HOT START ✔
SILICONE INSULATION ✔
ARC STABILIZATION ✔

you'll find them ALL in M&T A-C WELDERS

Yes, all of these important features contributing to better welder performance and longer welder life are combined in M&T a-c welders.

Automatic "hot-start" means faster welding because it provides correct current surge automatically for any current setting—permits easy arc starting without dialing.

Silicone insulation assures longer welder life, permits more overloading—withstands higher temperatures, moisture, chemical fumes.

Arc stabilization steps up welding speeds, improves quality by guaranteeing a stable arc: eliminating "pop-outs."

A-C welding at its best is available from 30 through 625 amps in the new M&T. Write for literature. Or contact your nearest distributor or M&T Branch.

Contact your local distributor or nearest M&T office.

METAL & THERMIT CORPORATION
100 EAST 42nd STREET • NEW YORK 17, N. Y.

If you write maker identify as IEN - 10135

HOW TO WELD CONTACTS

WELDPOWER*

Cuts Rejects
Increases Production
Eliminates Costly, Less Satisfactory Methods

However you now make them, look into the advantages of assembling contacts and relay tips with Raytheon stored energy WELDPOWER. Designed especially for welding light gauge ferrous or non-ferrous metals and dissimilar combinations, WELDPOWER provides the precision control essential for a strong, permanent bond. Because rejects go down as production goes up, WELDPOWER Units quickly pay for themselves in a better product at lower cost.

Investigate the many advantages of joining any small precision part with Raytheon Condenser WELDPOWER. Control units are available in 5 sizes with appropriate WELDPOWER Heads. Send sample parts or write for details. Address Dept. 6270-IN-9.

RAYTHEON
Raytheon is Production
*Reg. U. S. Pat. Off.
RAYTHEON MANUFACTURING COMPANY
Equipment Sales Division, Waltham 54, Mass.
DISTRICT OFFICES: Boston • New York • Cleveland • Chicago • New Orleans • Los Angeles (Wilmington) • San Francisco • Seattle
INTERNATIONAL DIVISION, 19 RECTOR STREET, NEW YORK CITY

If you write maker identify as IEN - 10136

HAVE YOU TALKED WITH YOUR JOHNSON DEALER LATELY?

Model J, 10" x 18" capacity. Available as a wet or dry cutting machine.

If you are in need of a band saw, find out now about the low cost of a Johnson Metal Cut-Off Band Saw. You'll find the investment surprisingly small, especially when you consider the many profitable uses it has in both large and small plants. The adaptability and flexibility of a Johnson Saw is almost unlimited: Rods, Tubes, Angles, Heavy Rounds or Flats, all can be cut quickly and economically. Only a minute or two for set-up; cutting action fast; smooth quiet Cuts, with unbelievable accuracy.

Junior Model B (with or without casters) 5" x 10" capacity.

THERE IS A DEALER NEAR YOU

JOHNSON MANUFACTURING CORP.
ALBION, MICHIGAN

If you write maker identify as IEN - 10138

They'll last this time!

THEY'RE

RESOLITE

SHATTERPROOF LIGHTS!

Every factory or shop subject to severe vibration, concussion, intermittent radiant heat and other causes of glass pane breakage, should be glazed with shatterproof, crackproof RESOLITE.

Pale green Resolite provides high light transmission, excellent light diffusion and visual comfort. Resolite is molded of polyester resins, reinforced with Fiberglas mat. It is unaffected by weather extremes of heat, cold or moisture and inert to industrial fumes.

For glazing partitions or similar use, Resolite is supplied in flat sheets up to 42" x 96", in standard or extra heavy weights, and in eight colors. Sheets or lights are cut at the factory to specified dimensions, but may be cut on the job, when necessary, with a hand or disk saw. Standard glazing methods are used to install Resolite.

Resolite is also supplied in standard corrugated roofing sheets for simplified skylighting.

For complete information and name of nearest distributor, write:

Route 19

RESOLITE Corporation • ZELIENOPLE, PA.

If you write maker identify as IEN - 10139

Always Specify

EVANS' SPRINGS

FOR Precision

FOR Performance

COMPRESSION • TORSION
EXTENSION & SPECIAL
TYPE SPRINGS
METAL STAMPINGS &
WIRE FORMS

SEND FOR SPECIFICATION SHEET
FOR EASY ORDERING

JOHN EVANS' SONS, INC.
506 NORTH 13th STREET
PHILADELPHIA 23, PA.

If you write maker identify as IEN - 10140

NEW SEALER HOLDS THEM!

Prevents Leaks . . . Protects Surfaces

This newly-developed polyhydroxylated plastic sealer adheres to any surface. Does not become hard or brittle. Holds at joints under 2,000 lbs. pressure. Holds even at 400 degrees F. Use as a protective coating or as a pipe joint compound. Holds these chemicals and many others:

Dries but doesn't harden. Stays flexible.

- → VARSOL, DRIP OIL, CARBON TETRACHLORIDE
- → TRICHLORETHANE, CHLOROBENZENE, ETHYLENE DICHLORIDE
- → TRICHLORETHYLENE, TRICHLOROBENZENE, BENZENE
- → XYLENE, BUTANE, PROPANE
- → HEXANE, PETROLEUM NAPTHA, SILICONE OILS
- → PETROLEUM OIL, TOLUOL, GLYCERINE
- → SULPHUR DIOXIDE
- → WATER, "FREONS", METHYLENE CHLORIDE
- → METHYL CHLORIDE, PERCHLOROETHYLENE, ORTHO-DICHLOROBENZENE
- → CUMENE, CYMENE, GASOLINE
- → JET ENGINE FUELS, FORMALDEHYDE, VEGETABLE OILS
- → KEROSENE, COAL TAR CHEMICALS, PAINT SOLVENTS
- → MOST NON-POLAR SOLVENTS, CHLORINATED SOLVENTS, AROMATIC SOLVENTS
- → AMMONIA

Leak Lock Comes in 1½ oz. tubes (dozens), pint cans and 10 lb. cans. Order from Highside Chemicals Co., 10 Colfax Ave., Clifton, N.J.

1. USE AS A PIPE JOINT COMPOUND . . . .
2. USE AS A PROTECTIVE COATING . . . . .

If you write maker identify as IEN - 10141

WELDING . . Adjustable fixture positions submerged arc machine

Source: HILLCO INC.
2733 E. Latimer St., Tulsa, Okla.

Unloads the operator

Steel platform is mounted on wheels with an upright and an adjustable bracket to carry a semi-automatic submerged-arc welding machine and its welding head. The unit positions the equipment in connection with suitable work manipulator for continuous seam welding as on the circumferential welds of a circular tank. For this particular service the fixture illustrated will handle any size range to 54 in. in diameter.

The welding machine locates on the platform so the operator has quick access to the controls. A wheel operated elevating mechanism moves the welding head up and down on the upright standard.

If you write maker identify as IEN - 10142

COUNTING . . Electronic equipment designed and built for specified use

Source: DATA ENGINEERS INC.
4606-10 Ravenswood Ave., Chicago 40, Ill.

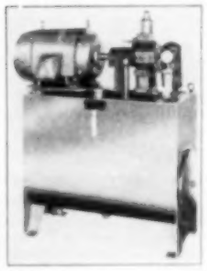
Illustrated bulletin states position

The company announces assembly of a group of experienced engineers and designers of electronic counting and recording equipment together with installation of laboratory and model shop facilities to design and build special electronic equipment for specified use. The organization also is available for research, development and production of precision electro-mechanical and electronic equipment to a point where it can be put into regular production lines.

If you write maker identify as IEN - 10143

DRIVE . . Hydraulic pump with motor, tank and accessories

Source: SUPERDRAULIC CORP.
14254-58 Wyoming Ave., Detroit 4, Mich.



The company has added a new line of power units, designated JHC, to regular manufacture of its radial hydraulic pump. It is prepared to supply this unit for specified application with mounting on 30, 60 and 80-gal. standard tanks each with cleanouts in the tank at both ends, sight gages, filler and bleeder caps and oil filters. Complete assembly includes the pump and its direct connected motor with the necessary valves and pipe connections ready for installation.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 30

If you write maker identify as IEN - 10144

SAVE YOUR OIL, MONEY AND MACHINERY WITH HILCO LUBRICATING AND INDUSTRIAL OIL MAINTENANCE EQUIPMENT - - -

OIL RECLAIMER

PURIFIER, RE-REFINER

FILTER

HIGH CAPACITY RECLAIMER

A COMPLETE LINE OF EQUIPMENT FOR RECLAIMING, FILTERING, PURIFYING AND RE-REFINING OIL

★ Hilco units are available for continuous or batch operation. You can keep your lubricating and industrial oils clean and recover large quantities of oil at low cost.

Whenever Oil is used it becomes contaminated — must be discarded or conditioned for further use

There Is a **HILCO** to do This Job for You

Cleans Oil, Reduces Down Time, Increases Production!

★ Tell Us About Equipment You Are Operating and We Will Forward FREE Literature and recommendations.

OIL PURIFIER DIVISION

THE HILLIARD CORP.

35 W. 4th ST. • ELMIRA, N. Y.

IN CANADA — Upton-Bradeen-James, Ltd. 590 Bay St., Toronto, 3464 Park Av., Montreal

If you write maker identify as IEN - 10145

Thor ANNOUNCES A NEW

AIR IMPACT WRENCH

With Exclusive Rolling Ball Type Cam!

3/8" Bolt Size Capacity "No. 24"

New cam design permits diameter threaded fasteners to be tighter and tighter BEFORE IMPACTING—the operation is executed with fewer impact blows are required for final tightening.

Coupled with a large overload capacity, the new type wrenches are only moderately stressed in performing work within their rated capacity, resulting in greatly increased normal working life.

INDEPENDENT PNEUMATIC TOOL COMPANY
AURORA, ILLINOIS

Thor PORTABLE POWER TOOLS
ELECTRIC • PNEUMATIC

If you write maker identify as IEN - 10146

GET RID OF WIRES

and get foolproof connections in

- RADIOS
- AMPLIFIERS
- SWITCHBOARDS
- METERS

Print your circuits with Du Pont Conductive Coatings—reduce costs and time

Highly conductive coatings of low resistance are easily obtained by spray, brush, dip or stencil to metals and non-conductors. These coatings can be used to make economical, lightweight, compact high-voltage capacitors; static shields to replace usual cans and foils; resistors and solder seals. For more information, send for Bulletin CP 2-1248. E. I. du Pont de Nemours & Co. (Inc.), Electrochemicals Dept., Wilmington 98, Del.

DU PONT ELECTROCHEMICALS

DU PONT

BETTER THINGS FOR BETTER LIVING . . . *THROUGH CHEMISTRY*

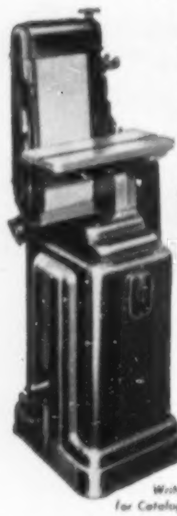
If you write maker identify as IEN - 10147

where dependable timing is required ...consult *Cramer*

As specialists in TIME as a factor of CONTROL, we have developed a wide range of timing devices for a great variety of commercial and industrial applications... and will welcome the opportunity to recommend the equipment best suited to meet your specific requirement. Write for complete information.

THE R. W. CRAMER CO., INC.
BOX 16, CENTERBROOK, CONN.

If you write maker identify as IEN - 10148



VERSATILE—
handles dozens of finishing operations
PORTABLE—
use it where it's needed

Delta 6" Abrasive Belt FINISHING MACHINE

This husky, dependable machine is designed to handle the numerous sanding, polishing and finishing operations common to most shops. It's built to last, with a heavy trunnion carrying the tilting table—sealed, lubricated-for-life ball bearings, and many other special DELTA features.

- Operates vertically or horizontally
- Table tilts easily and quickly, 20° toward belt, 45° away from it.
- Adjustable fence for edge sanding, adjustable back for flat sanding—in horizontal position.
- Fully guarded for complete protection.

Write for Catalog

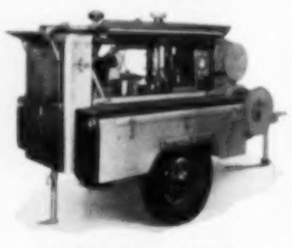
There's a Delta Power Tool for your Job - Wood or Metal Working
53 MACHINES—246 MODELS—MORE THAN 1300 ACCESSORIES
For Delta dealers see your Classified Phone Directory under "Tools"

DELTA MILWAUKEE
DELTA POWER TOOL DIVISION
Rockwell MANUFACTURING COMPANY
624K N. LEXINGTON AVE., PITTSBURGH 8, PA.

If you write maker identify as IEN - 10151

COMPRESSOR . . Two stage rotary, four sizes, 105 to 600 cfm., 100 pounds

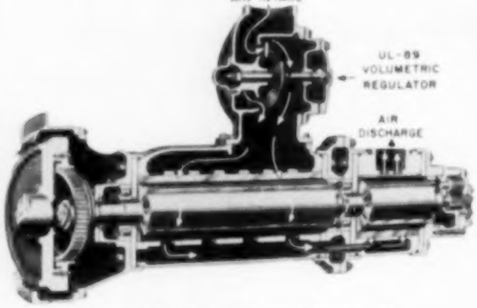
Source: INGERSOLL-RAND CO.
11 Broadway, Dept. PC, New York 4, N. Y.



Bulletins 2314 and 2316

Cooled oil injection, directly into the air during compression, characterizes the operation of the company's Gyro-Flow two-stage vane type rotary compressor. Three new sizes have been added following the initial introduction previously described IEN-2141-51. The oil cools the air to a point where delivery will hold under 200 deg. F.

It seals the radial blades against air slippage and it lubricates them. Oil and delivered air pass out through the discharge into a combination receiver and separator where baffles and a special filter developed by the company remove all of the oil except a negligible trace. The separated oil is circulated through a radiator type cooler located in front of the radiator for the engine that drives the compressor and back to the oil pump through which it is reintroduced to the incoming air.



Arrows show air flow through both stages

Operating control is by the company's Air-Glide stepless regulator that controls engine speed so operation holds in step with the demand for air. Pressure holds between 100 and 110 lb. over the entire capacity range. Rotary operation is free from pulsation or vibration. No pistons, rings, rods or clutch are required.

Model 105, the smallest assembly in the line, is direct connected to a Continental gasoline engine. Models 210 and 315 can be specified with either a General Motors diesel or a Continental gasoline engine. The largest, Model 600, is driven by a General Motors diesel. Assembly weights on pneumatic tired wheels, as shown in the illustration, range from 2,630 to 9,500 pounds.

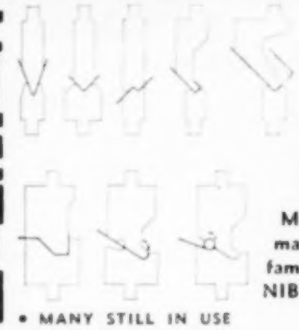
Identify as IEN - 10152

Clutch plates made of powdered metal and graphite tend to stick together when they are stacked and heated in a sintering oven. Sticking can be prevented by coating the faces before stacking with Acheson Prodag, an aqueous dispersion of semi-colloidal graphite.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10154

BRAKE DIES



Made from FORGED CHISEL STEEL BILLETS

Made by the makers of the famous SEMCO NIBBLER PRESS

- MANY STILL IN USE EVEN AFTER 10, 20 AND EVEN 30 YEARS.
- THEY COST MORE BUT THEY LAST FOR YEARS.

Write for estimates on your work and ask for latest literature.

SEMCO
SERVICE MACHINE COMPANY
INCORPORATED
200 MILLER STREET ELIZABETH, N. J.

If you write maker identify as IEN - 10149

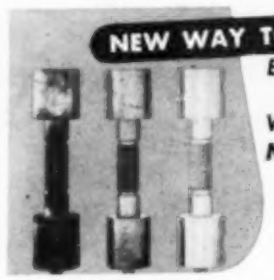
New Performance and Dependability Standards with WW!

WW SEAM WELDING WHEELS

WEIGER-WEED
Weiger-Weed & Company, Division of Fansteel Metallurgical Corporation, 11644 Cloverdale Avenue, Detroit 4, Michigan

If you write maker identify as IEN - 10155

NEW WAY TO STOP RUST
Easily! Quickly! Without Slushing
MARVELLUM VPI WRAP
Paper coated with a Volatile Corrosion Inhibitor



Without VPI With VPI

Look at these steel samples — they tell the story. After 3 years of unsheltered storage outdoors in an industrial marine atmosphere, only the VPI wrapped sample on the right is still bright and clean. The untreated sample on the left was wrapped in plain kraft, the middle one treated with a good rust-preventive oil and wrapped in Grade A barrier material. All were overwrapped with kraft-asphalt paper. *Your* steel or aluminum parts can be equally well protected from corrosion. VPI, developed for government use during the war, is now available to everyone. Economical, easy to use, VPI can save you time and money.

Marvellum VPI is available in sheets, envelopes or special containers. Marvellum has complete facilities under one roof for designing, producing and coating VPI Wraps. Also makers of a wide range of other barrier materials to meet your needs for product protection. Distributors in all major cities.

Get all the facts. Write for FREE BOOKLET

The Marvellum Company
22 APPLETON STREET HOLYOKE, MASS.
First and Foremost in VPI Protection

If you write maker identify as IEN - 10150

Foredom FLEXIBLE SHAFT MACHINES
PROVIDE MORE POWER —LONGER MOTOR LIFE
BECAUSE UNLIKE conventional type grinders MOTOR is NOT DWARFED to fit the hand!

YOU GET more precise control and unobstructed view of your work because of FOREDOM'S small-as-a-pencil handpiece which provides marvelous, effort-less operating ease.

For Every "SMALL-WORK" Job of GRINDING and FINISHING

2-WAY USEABILITY — Hang it up on any convenient hook or suspend it from a shoulder strap.

ALL 3 DEPARTMENTS — Maintenance, Production, Tooling, can make profitable use of FOREDOMS. At their low cost, you can afford to spot them liberally about the plant for emergency and every day use.

THE SECRET'S IN THE PENCIL SIZE HANDPIECE

MODEL 100 $17.75 (illustrated)
8-step foot rheostat $5.25 extra. Your choice of 3/32" or 1/8" collets. Add 85c if you want both.

Other heavier duty models, bench and hang-up types, with your choice of 5 quickly-interchangeable handpiece types at proportionately modest prices.

★ *Quality Tested Since 1922* ★

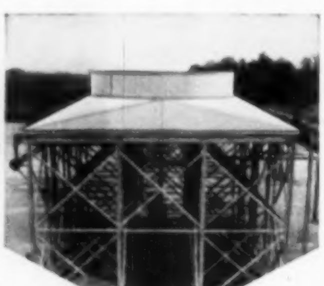
See Your Industrial Supply Distributor—If He Cannot Supply You Write to Us

MAIL COUPON FOR CATALOG

FOREDOM ELEC. CO., Dept. N-4158 Name
27 Park Place New York 7, N. Y. Address
Send your catalog No. N-4158 City & Zone State

If you write maker identify as IEN - 10153

Here's why Aeromaster FANS are BEST for ANY Cooling Job



★ *Adapted high-speed, top-efficiency aircraft propeller design* ★ *Engineering service for special installations* ★ *Longer life—improved anti-flutter performance* ★ *Saves up to 10% in power costs* ★ *Each blade precisely pre-balanced* ★ *Easily assembled by unskilled labor* ★ *Aeroloid blade coating unaffected by mild acids and alkalies* ★ *Blade pitch easily adjustable to meet changing power requirements* ★ *Specified as original equipment by many manufacturers* ★ *Sales engineers available in principal cities.*

Koppers Aeromaster Fans are available for any sizable industrial cooling requirement, from diesel locomotives to giant air conditioning systems. Standard models from 5 to 24 ft. dia., with 4, 6 or 8 blades per fan. Capacities up to 750,000 c.f.m. Every fan fully guaranteed. For complete detailed information, send us the type and size of the equipment to be cooled.

Koppers Company, Inc., Aeromaster Fans, 279 Scott St., Baltimore 3, Md.

KOPPERS

KOPPERS COMPANY, INC.

If you write maker identify as IEN - 10156

NEWCOMER CARBIDE *Specialists* will gladly show you how to

WITH THE NEW GRADE S-6 CUTTING CARBIDE

Highlights of the NEW S-6

Write today for Catalog No. 108 which shows all other standard grades of Newcomer Carbides.

S-6 Carbide is new and different — industry-proven on machining Armor plate, rough steel forgings and castings. Even though S-6 Carbide can be used at high machining speeds, its greatest tool life is obtained at speeds slower than those at which other grades of carbide can be successfully used. S-6 Carbide makes deeper cuts because it can be set for heavier feeds. S-6 Carbide, because of its extremely high strength, is excellent for interrupted cuts.

NEWCOMER PRODUCTS, INC.
General Sales Offices
PITTSBURGH 21, PENNA.
Plants at LATROBE, PENNA.

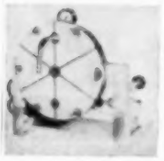
If you write maker identify as IEN - 10157

Ertel Filters

FOR LABORATORY AND SMALL LOT PRODUCTION

Model 10 in either stainless steel, hard rubber, or brass, nickel or silver plated, to meet all laboratory filtration requirements, provides the versatility that ranks it "tops" in modern laboratories. Model E-1 is recommended for lab or batch filtration of 5 to 10 gallons. Model EBW is the smaller production unit that has solved hundreds of operations for extremely low initial investment.

MODEL No. 10 CYLINDER TYPE



MODEL E-1 SINGLE DISK

MODEL EBW FILTER

Experience has proven that the great majority of filtration problems can be solved by our engineers with their seasoned background of filtration experience. What's your problem?

ERTEL ENGINEERING CORPORATION

KINGSTON 4, NEW YORK

Branch Office & Showroom Located in New York City

COMPLETE LINE OF *Liquid Handling Equipment*

ERTEL

If you write maker identify as IEN - 10158

TEST IT FREE! Samples of VELLUM are yours for the asking. Send for this kit today.

Write on your company letterhead for sample kit, sent without obligation

Ageproof VELLUM

Permanently super-transparent AGEPROOF makes better prints now, or years from now

This is the famous Dietzgen vellum that combines a perfect drafting surface with perfect reproduction qualities. And AGEPROOF VELLUM cannot turn yellow, become brittle or lose transparency with age.

Plasticized through and through, AGEPROOF VELLUM contains no oil, no wax to bleed, become rancid or turn color. Because the plastic transparentizing agent permeates every fibre, you can erase repeatedly without troublesome ghosts occurring in prints, and redraw without feathered lines if you are using ink.

Available in three different weights, in frost-white or eye-easing blue. Test AGEPROOF VELLUM and you'll never use any other material for important tracings.

EUGENE DIETZGEN CO. • Chicago • New York • San Francisco New Orleans • Los Angeles • Pittsburgh • Washington • Philadelphia Milwaukee • Dealers in All Principal Cities

DIETZGEN

EVERYTHING FOR DRAFTING SURVEYING & PRINTMAKING

Free Samples!

If you write maker identify as IEN - 10160

TRUCKS . . Steel dump bodies and hydraulic hoist, 1½ to 2½ ton

Source: CONVERTO MFG. CO.
Green & Third Sts., Cambridge City, Ind.

Mounts on user's truck

The company announces addition of a new line of medium duty steel bodies and hydraulic hoist to its previously developed equipment that was maximum to 1 ton in size. The new units start at 1½ ton and extend to 2½ ton. The body is fitted with an 8-gage steel floor and is 6½ ft. in standard width. It is available in a range of designs for specific application.

The hydraulic equipment is driven by power take-off to the company's gear type pump in a direct hoist design for average loads or a double arm design for extreme loads. This equipment locates in the frame beneath the body to provide a 60-deg. dumping angle and fast positive operation.

If you write maker identify as IEN - 10161

CORROSION PROOFING . . Phenolic, air dries on equipment, structures

Source: RIC-WIL PLASTIC COATING & MFG. CORP.
1288-92 Euclid Ave., Cleveland 15, Ohio

Inert and porporous

Cold setting type, Ricwilite 7180, has been added to the company's lines of baking or heat hardening phenolic resin coatings. The new material cures or polymerizes at room temperature following addition of a catalyst just prior to application. It sets to a hard tough glass-like film that remains flexible on metal, concrete, wood, plaster.

Two forms are available for spraying and for brushing. Both are supplied ready to use as soon as the catalyst has been added and thoroughly mixed in. Application requires a clean dry surface. Thorough curing takes place in about 7 days.

If you write maker identify as IEN - 10162

MAGNIFYING . . Illuminated unit mounts reflector equipped 5X lens

Source: BAUSCH & LOMB OPTICAL CO.
626 St. Paul St., Rochester 2, N. Y.

Three handles are interchangeable on this new reflector equipped magnifier. One connects to a 110-volt line to operate a small lamp. The second mounts a battery operated lamp. The third does not provide illumination. Any one of the three handles fits a reflector type shade into which the magnifier snaps. A metal tripod is included as a standard accessory. The lens is corrected for distortion and aberration. It has a wide flat field.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10163

FOR YOUR

STAINLESS STEEL FASTENERS... IT'S ALLMETAL

for quality and delivery

ALLMETAL, Specialists in Stainless, Produce Stainless Products Exclusively

ALLMETAL

the leading source for Stainless Screws, Nuts, Bolts, Washers, Pins, Rivets. Made right, Priced right. "AN" and Standard Types carried in stock. Phillips Recessed Head Screws and Specials available too.

WRITE FOR CATALOG K

MANUFACTURERS SINCE 1929

STAINLESS STEEL FASTENERS

ALLMETAL SCREW PRODUCTS COMPANY, INC.

33 GREENE STREET NEW YORK 13, N. Y.

If you write maker identify as IEN - 10164

Variable Speed Control for Light Machinery

Costs only a trifle — brings amazing results

Converts a constant speed motor to a variable speed drive . . . fits on standard motor shaft. Provides accurate, positive speed changes while the machine is running. With a turn of handwheel, you get exactly the right speed for every job under every changing condition. Sizes from ¼ to 1½ hp—$7.50 and up. Write for Bulletin IN 66b-J.

Reeves Pulley Company • Columbus, Ind.

REEVES *Variable Speed Control*

If you write maker identify as IEN - 10165

M·S·A ChemKlos . . .

NEW SERVICEABLE GRAY COLOR

- Made of acid and caustic resistant Dynel
- Special abrasion resistant weave
- Comfort tailoring at every point

From collar to trouser cuff, M.S.A. ChemKlos have the construction and fabric features that answer industry's demands for longer-wearing, smarter-looking, comfortable work clothes. Made throughout of Dynel, the new fiber that resists acids and caustics, and loomed in a special weave that gives improved abrasion resistance, M.S.A. ChemKlos wear ON when other work clothes wear OUT. Sturdy bar tacking, double and triple stitching, tough plastic acid and caustic resistant buttons, and many other construction features add to durability and comfort. Available in shirts, trousers and coveralls. Write for details.

MSA SAFETY EQUIPMENT HEADQUARTERS

Call the M.S.A. man on your every safety problem . . . his job is to help you.

MINE SAFETY APPLIANCES CO.

Braddock, Thomas and Meade Sts.
Pittsburgh 8, Pa.

At Your Service
68 Branch Offices in the United States

If you write maker identify as IEN - 10166

HARPER

Specialist in *all* Non-Corrosive Fastenings!

Call Harper *first!* America's largest producer of non-ferrous and stainless steel fastenings—specializing in bolts, screws, nuts, rivets, washers and accessories in brass, bronze, copper, aluminum, Monel, stainless steel—to solve your problems in corrosion, heat, abrasion and stress. Over 7,000 items stocked by warehouses and distributors from coast to coast.

FREE—*this 96-page Harper Price List and Stock Book.*

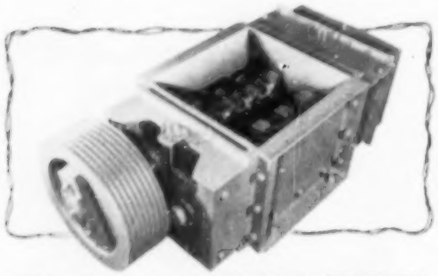
HARPER EVERLASTING FASTENINGS

The H. M. Harper Company
8211 Lehigh Ave.,
Morton Grove, Ill.
Rush Harper Price List and Stock Book.
Name.....
Address.....
City..... State.....

CALL HARPER FIRST!

for Bolts, Screws, Nuts, Rivets, Washers and Accessories in Brass, Bronze, Copper, Aluminum, Stainless Steel.

If you write maker identify as IEN - 10167



PRATER *Industrial Model* CRUSHER-FEEDER

For First Stage Reduction of Bulk Materials

This economical unit will reduce lumpy materials, from their original bulk state to an exact degree of uniformity as predetermined by the feed gate adjustment. The cast alloy cutting rolls—rotating in opposite directions toward the heavy duty shear bar — provide a powerful crushing action.

The Prater Crusher Feeder is designed for heavy duty service. It is compactly built, suitable for mounting independently on a grinder or other process unit, or in close proximity. Quickly demountable rolls are easy to service. Fully enclosed machine-cut gears, running in oil, and safety shear pin hub on drive pulley add greatly to the life of the unit. Built in 4 types and sizes. Write for details and prices.

PRATER

PRATER PULVERIZER COMPANY, 1536 So. 55th Court, Chicago 50, Ill.

If you write maker identify as IEN - 10168

Clarke

is the answer to heavy floor traffic

MODEL P-17
CLARKE FLOOR MAINTAINER
Job fitted sizes for every application. Scrubs, waxes, polishes, sands, steel wools, and shampoos floors to perfection. Four sizes.

Clarke is the cure for heavy floor traffic in any building. It's easy to keep floors clean, waxed and polished with a multi-duty Clarke Floor Maintainer on the job. Special floor care operations . . . rug shampooing, steel-wooling and sanding are quickly, quietly and economically accomplished. Floor maintenance costs take a nose-dive when superior Clarke equipment is at work . . . and we'd like to prove this to you in your own building. For a free demonstration, send the coupon below today!

MODEL WD-23
CLARKE WET AND DRY VACUUM CLEANER
Picks up water, dirt and dust. Quick draining dump valve eliminates heavy lifting.

CLARKE SANDING MACHINE COMPANY
Muskegon, Michigan

Floor Sanding . . . Edging . . . Maintenance Machines . . . Portable Hand Sanders

CLARKE SANDING MACHINE COMPANY
289 Clay St. • Muskegon, Mich.

Please rush me hints on easier and faster floor care and more information on the following machines:

☐ Clarke Floor Maintainer ☐ Clarke Wet and Dry Vacuum Cleaner
☐ Please arrange a free demonstration

NAME _____
ADDRESS _____
CITY _____
STATE _____

If you write maker identify as IEN - 10170

VIBRATOR. . Motor driven unit for aircraft instrument panels

Source: GLOBE INDUSTRIES INC.
123-27 Sunrise Place, Dayton 7, Ohio

Shakes for accuracy

Unbalanced weight mounted on the end of a 2-pole 24-volt dc. motor in the housing of this new vibrator supplies a shaking force ranging from 0.85 to 3.4 lb. at 2,500 rpm. depending on the weight employed. The unit mounts on an aircraft instrument panel to keep the panel "alive" so instruments will not stick at a reading at which they may have been registering for some little time or upon start from zero position.

The cylindrical housing is black anodized aluminum with the interior enclosure made of cadmium plated steel. The assembly provides magnetic shielding, good mechanical protection and keeps out dust, moisture and salt spray. Weight is about 10 ounces. Overall length is about 5 inches. The company is prepared to supply the unit for any standard dc. voltage.

If you write maker identify as IEN - 10171

GRINDING . . Combination sharpener for circular saws and planer knives

Source: BELSAW MACHINERY CO.
313-17 Westport Road, Kansas City 2, Mo.

Tooth setter to right

Disc and cup wheels are mounted on the two ends of the motor shaft in this new Sharp - Smith grinding machine. Set-up can be made to joint, gum, bevel grind and also to set circular saw blades from 4 to 48 in. in diameter. Set-up can be made also to sharpen planer and jointer knives measuring to 24 in. in length.

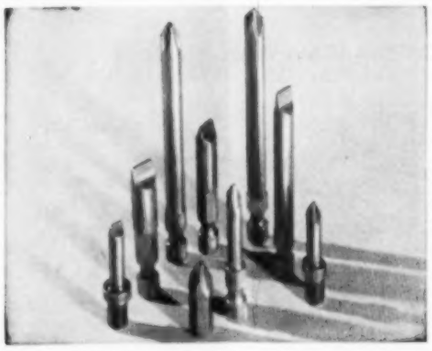
The machine provides positive settings for both types of work to produce accurately ground work. No special operator experience is required following a reasonable interval of initial practice.

Identify as IEN - 10172

One American abrasive cleaning machine at Fairfield Mfg. Co. is employed to remove heat treat scale from gears and also to shot peen the cleaned gears. A separator removes worn shot too small to be useful. A shot adding mechanism replaces the worn material with new. A special traveling carriage is added to peen worm, spur and helical gears. The one machine can handle gears to 15 in. in diameter.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10173



You save replacement time with HOMMEL power screwdriver bits

Specially selected alloy steel and proper heat treating have given Hommel bits the hardness and toughness required for maximum service without replacement. A complete line for air and electric power screwdrivers is available . . . consisting of ¼ hex drive and threaded shank bits for slotted, Phillips, Frearson or Reed and Prince screws. Write now for catalog to Dept. IEN.

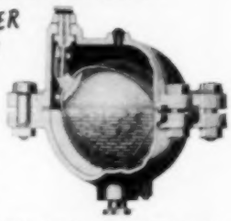
Since 1906 **HOMMEL**

Ludwig Hommel & Co., 72 First Ave., Pittsburgh 22, Pa.

If you write maker identify as IEN - 10174

GET RID OF AIR ACCUMULATIONS IN PIPE LINES...

A BIG TROUBLE SAVER THAT COSTS YOU LITTLE!



When air lodges at high spots in pipe lines, it reduces the effective area of the pipe, creates a friction head, lowers pumping capacity, and may result in serious water hammer!

Simplex Air Release Valves bring you a sure, efficient cure for these difficulties . . . venting air *automatically* before it can cause damage.

The Simplex Air Valve is easily installed . . . positive in action . . . ample in capacity. Standard valves for pressures up to 250 p.s.i. . . . special valves for pressures up to 800 p.s.i. Thousands have been in successful use for over 50 years.

IT'S SIMPLEX IT'S ACCURATE

Write for free bulletin to Simplex Valve & Meter Co., Dept. 7, 6717 Upland Street, Philadelphia 42, Pa.

SIMPLEX
VALVE AND METER COMPANY

If you write maker identify as IEN - 10175

General Purpose Wheels...

General Purpose Wheels by CARBORUNDUM give you the widest possible range of abrasive tool versatility. Furnished in standard sizes for every known make of grinding machine, they improve the quality and quantity of work from veteran and inexperienced operators alike. In the cool cutting, long lasting V30 bond developed especially for general purpose work, "ALOXITE" aluminum oxide wheels are outstanding performers. They give you the ideal combination of abrasive grain, bond, grade and structure which provide highest grinding performance at lowest total cost.

ORDER FROM YOUR CARBORUNDUM DISTRIBUTOR TODAY. He's your best bet for complete stocks, prompt delivery, experienced counsel on latest developments in the field. You'll find him listed in the yellow pages under "Abrasives." Phone him today—it's to your profit!

This "tell-all" booklet is FREE!

THE CARBORUNDUM COMPANY, Dept. IEN 81-81
Niagara Falls, New York
Please send me, FREE, your booklet, "Causes and Corrections of Common Grinding Errors."

NAME AND TITLE _____
COMPANY _____
STREET AND NUMBER _____
CITY _____ ZONE _____ STATE _____

Only CARBORUNDUM TRADE MARK

offers ALL abrasive products...to give you the proper ONE

"Carborundum" and "Aloxite" are registered trademarks which indicate manufacture by The Carborundum Company, Niagara Falls, New York.

If you write maker identify as IEN - 10177

SOLVE CORROSION PROBLEMS

with TAPECOAT*

The Original Coal Tar Tape Protection for Pipe, Pipe Joints, Couplings, Tanks, etc.

Here's time-tested, coal tar protection against moisture, acids, alkalis, chemical fumes and other severe conditions—both underground and above ground. TAPECOAT gives greater protection, reduces maintenance and cuts pipe replacement cost. It's easily applied because it's sized to the job. Comes in widths of 2", 3", 4", 6", 18" and 24". It's quickly applied by use of a torch to bleed the coating for perfect bond. Wrapped spirally or "cigarette-wrapped."

Write for details and prices.

*Reg. U. S. Pat. Off.

The TAPECOAT Company
1553 Lyons Street, Evanston, Illinois
Originators of Coal Tar Tape Protection

If you write maker identify as IEN - 10178

they call me Handy Andy

Here's the handiest test pump for hydraulically testing pipe, valves and fittings; for operating hydraulically actuated equipment; for hundreds of other uses in field, laboratory or shop. ★ This two-stage, manually operated pump has one cylinder for low-pressure testing (up to 2,500 psi); is quickly shifted to develop up to 6,000 psi. ★ Replaces elaborate, expensive testing equipment. ★ Readily portable (weighs only 70 pounds) and with a bucket of water you can quickly and painlessly develop on-the-spot pressures up to 6,000 psi. ★ Costs mighty little—lasts indefinitely—pays for itself long before a few inexpensive wearing parts need to be replaced. ★ For details and price address . . .

BAKER OIL TOOLS, INC.
BOX 2274 TERMINAL ANNEX
LOS ANGELES 54, CALIFORNIA

If you write maker identify as IEN - 10179

Ful-Vu E-Z SLIDE CARD AND TICKET HOLDERS

KEEP WORK RECORDS CLEAN AND NEAT

Ideal for
SHOP ORDERS
JOB TICKETS
COST DATA
WORK CHARTS
BLUE PRINTS
CARDS & PASSES
INSPECTION CHARTS
MACHINE RECORDS
INSTRUCTION DATA, etc.

Crystal clear Ful-Vu plastic holders give positive protection against dirt, smudges, grime and damage. New "easy slide" design makes it easy to insert or remove forms from holders. Dozens of standard types. Specials to any shape or size. Write for catalog and sample of E-Z Slide holder.

Ful-Vu PROTECTS GLORIFIES SYSTEMS OF DISPLAY

COOKS' Inc., Camden, N. J.

If you write maker identify as IEN - 10180

PUMP . . Priming inductor fills suction line to centrifugal pump

Source: NAGLE PUMPS INC.
1241 Center Ave., Chicago Heights, Ill.

Replaces foot valve

Installation of this new priming inductor is at the bottom of the suction line to a centrifugal pump mounted above normal liquid level. The larger of the two flanges connects to the pump intake line. The smaller flange connects to a liquid pressure supply capable of providing about 4-lb. pressure for each foot of suction head.

A valve in this supply line is opened prior to starting the pump. Result is delivery of liquid into the suction opening leading to the pump. Priming is completed in a few seconds after the pump is started. The inductor is particularly suited for pumps handling solids suspended in liquids.

Thirteen sizes in the line apply on 1½ to 18 in. pump suction lines. The pressure supply line ranges from ¾ to 10 inches. Overall height is 7 to 60 inches. Weight is 9 to 1,800 pounds.

If you write maker identify as IEN - 10181

STEEL . . Graphitic tool stock, turned and bored bars to 16 inches

Source: TIMKEN ROLLER BEARING CO.
1833-37 Dueber Ave. S. W., Canton 6, Ohio

In stock at principal centers

Hollow-Bar Graph-Mo trade names a new turned and bored form of the company's previously developed graphitic tool steel. The new bored sections are intended for use in manufacturing ring gages, dies, annular parts. Stock sizes are 4 to 16 in. in outside diameter and in a range of wall thicknesses.

If you write maker identify as IEN - 10182

CONVEYING . . Ball bearing roller takes both thrust and radial loading

Source: SAMUEL OLSON MFG. CO.
2420-22 Bloomingdale Ave., Chicago 47, Ill.

Rides in any position

Two sizes measure 2⅝ and 4¼ in. in diameter in this new crown face idler roll for a belt conveyor. It is mounted on combination radial and thrust ball bearings protected by felt and metallic seals and lubricated through the shaft ends. The new roller can be mounted in horizontal or vertical position or at any angle for use with light duty power conveyors.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10183

3762 West Belmont Avenue • Chicago 18, Illinois

If you write maker identify as IEN - 10184

Though rain pours down on Multigrip
The plate will quickly drain,
And workers—safe from fall or slip—
Keep singing in the rain!

U·S·S multigrip FLOOR PLATE

UNITED STATES STEEL COMPANY, PITTSBURGH
COLUMBIA-GENEVA STEEL DIVISION, SAN FRANCISCO
TENNESSEE COAL & IRON DIVISION, FAIRFIELD, ALA.
UNITED STATES STEEL SUPPLY DIVISION, CHICAGO
UNITED STATES STEEL EXPORT COMPANY, NEW YORK

Sold by leading distributors from coast to coast

UNITED STATES STEEL

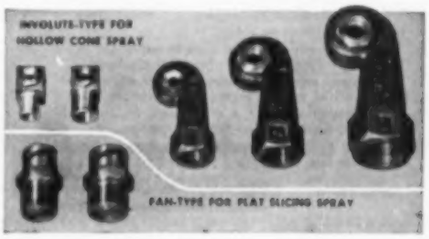
If you write maker identify as IEN - 10185

for • SPRAYING • WASHING • RINSING • COOLING • AIR CONDITIONING

Get the most out of your Spraying Equipment with minimum power . . . with efficient spraying.
Use Yarway Nozzles. No internal vanes or other restrictions to clog or hinder flow.
Wide range of standard sizes and capacities. Cast or machined from solid bar stock.
Thousands in use. Write for Bulletin N-616.

YARWAY SPRAY NOZZLES

YARNALL-WARING COMPANY
122 Mermaid Avenue, Philadelphia 18, Pa.

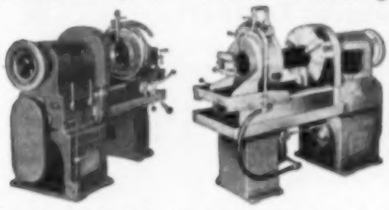


If you write maker identify as IEN - 10186

OSTER

"WILCO" PIPE MACHINES

for low cost, maintenance threading



Designed primarily for fast, low cost maintenance threading of pipe and bolts, Oster "WILCO" machines are also used for production threading.

Cutting-off speed is approximately three times threading speed. A single die-head covers the entire range of each "WILCO" machine.

No. 714 "WILCO" standard range: 1" to 4" pipe, extra range ½" and ⅝" pipe; bolt range ¾" to 3". No. 716 "WILCO" standard range: 1" to 6" pipe; bolt range 1" to 4".

Write for new "WILCO" Bulletin!

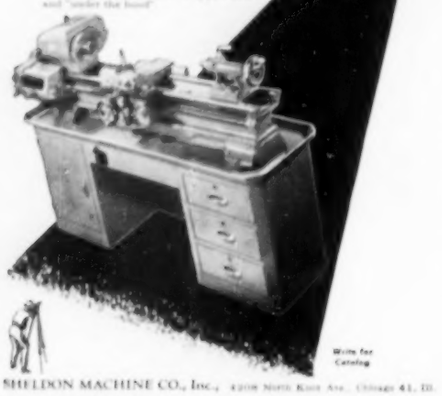
THE OSTER MFG. COMPANY
2053 E. 61st St., Cleveland 3, Ohio, U.S.A.

If you write maker identify as IEN - 10187

SHELDON
CHICAGO

A better Lathe from any angle

Judge it from any angle for accuracy, stamina, rigidity or capacity (for size). Check its component parts—its spindle, spindle bearings, lead screw, apron, carriage, bed, gearing, or the power delivered to its drive—you will find the SHELDON Lathe a quality tool both in appearance and "under the hood".



Write for Catalog

SHELDON MACHINE CO., Inc., 4209 North Knox Ave., Chicago 41, Ill.

If you write maker identify as IEN - 10188

Now...Spring Makers and Spring Users alike have a Uniform Method for Testing Springs!

THE TORRINGTON SPRING TESTER

Uses: for accurate inspection, in-use testing, designing springs for specific uses, and as a basis for statistical quality control.

Simple: can be used at operating levels by relatively inexperienced personnel. Portable!

Accurate: 2 models—the 8 pound model measures loads to the nearest 1/100 ounce, and the 16 pound model to the nearest 1/8 ounce; lengths and deflections to 1/1000 inch.

Fast: requires minimum time to adjust for accurate readings, or to reset for other springs.

Practical: measures under conditions approximating actual use, through interchangeable fittings.

High sensitivity: over a wide range, on both tension and compression types of springs.

For complete information please write: The TORRINGTON MANUFACTURING COMPANY TORRINGTON, CONNECTICUT

WORLD'S LARGEST BUILDERS OF SPRINGMAKING MACHINERY

If you write maker identify as IEN - 10189

Send NOW!

Invitation to Design Engineers

Get complete, concise engineering data showing how easily SYNCHRON timing motors and time machines may be applied to timing mechanisms now in production or still in the idea stage. Many practical advantages! Send coupon.

Pulls up to 8 oz. direct load at 1 R.P.M. Operates efficiently at 40° to +140°F. Available with gear trains to convert any speed.

SYNCHRON timing motors

HANSEN MANUFACTURING CO., INC., PRINCETON 2, INDIANA

Send catalog and engineering data to:

Name

Firm

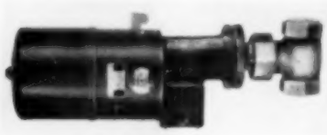
Address

City Zone State

If you write maker identify as IEN - 10190

VALVE . . Motor operated, 1 in., unit closes on open circuit

Source: MERCOID CORP.
4203 Belmont Ave., Chicago 41, Ill.



Circuit switch controls action

Series G2-64 and G3-64 are new stainless-steel line valves for opening and closing service in pipe lines carrying corrosive fluids such as acid mine water, sulfuric acid. G2-64 is rated for pressures to 275 lb. and temperature to 250 deg. F. It opens in 40 sec. and closes in about 8 seconds. G3-64 is rated for pressures to 600 lb. and 125 deg. F. It opens in 120 sec. and closes in 20 seconds.

The valve is equipped with an electric motor that drives an oil pump. Closing the motor circuit starts this pump and delivers oil against a spring backed piston to open the valve. Just prior to reaching full open position, the motor circuit is switched to a solenoid operated escape port that holds the oil in the cylinder and prevents the piston from returning the valve to closed position. Upon opening the circuit the solenoid releases its hold and the spring closes the valve.

If you write maker identify as IEN - 10191

FILTERING . . Porous metal unit for lubricating oil in vehicle engine

Source: PERMANENT FILTER CORP.
2307-11 Riverside Drive, Los Angeles 39, Calif.

$13 and $7

Porous metal in the form of a cone is employed as the filtering element in a new complete assembly for application on a vehicle engine or in a replacement kit to apply in an existing filter housing. The porous element can be removed, cleaned and replaced repeatedly.

Filterall is the trade name. The complete assembly, known as Model 200, has sufficient capacity for the average passenger car, light truck or industrial truck and is about one-half the height of a filter employing a replaceable cartridge. The porous bronze element will stop foreign matter to 5 microns.

Identify as IEN - 10192

Salt shaker maker has fitted a Delta drilling machine with a pneumatic feed, air cylinders and air valves, all of standard Mead Specialties design to do a multiple-hole drilling job on the shaker tops. All the operator has to do is to put work pieces in the fixture on the table and take them off when they are finished. Mead Specialties has a detailed picture of the machine set-up.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10193

NOW, FLTING Faultless ENGINEERED TRUCK CASTERS CUT HANDLING COSTS

5500 Series Double Ball Bearing Swivel Plate Caster with Rubber Tired Wheel

NEW!
MAN-SAVER AND EXPEDITER for INDUSTRY

Here's the answer to your need for *extra* mobility . . . *extra* load capacity . . . *extra* output from less manpower. It's the ideal caster for quickly and quietly moving trucks or other mobile equipment and there's a clear profit from the *extra* mileage they give. Ask your supplier for Series 5500.

- **Jumbo Swivel**—large diameter ball races. Two full rows of balls rolling around hardened raceways formed in heavy steel plates.
- **Husky Horn**—heavy gauge steel sides and top plate riveted into single unit of surplus strength.
- **Oversize King-Pin**—machined to precision fit.

FAULTLESS CASTER CORPORATION
Dept. IE-9, Evansville 7, Indiana
Branches in Principal Cities—Canada Factory: Stratford, Ont.

If you write maker identify as IEN - 10194

With the New Aircomatic® Welding Process

If your problem is taming the tough-to-weld metals . . . aluminum . . . aluminum bronze . . . the stainless steels . . .

If your problem is to gain higher speeds on your production-line welding runs . . .

If your welding requirements call for manual, semi-automatic, or automatic welding equipment which permits production-line joining of metal sections . . .

Then you will want a copy of the Aircomatic Process, Catalog 17 . . 8 pages, complete with all the basic information you need to know to obtain faster, high-quality, all-around welding for your plant or shop.

To get your copy of the AIRCOMATIC PROCESS, Catalog 17, please write us today on your letterhead. Address: Advertising Department, Air Reduction Sales Company, 60 East 42nd Street, New York 17, N. Y.

AT THE FRONTIERS OF PROGRESS YOU'LL FIND

AIR REDUCTION

AIRCO®

AIR REDUCTION SALES COMPANY · AIR REDUCTION MAGNOLIA COMPANY
AIR REDUCTION PACIFIC COMPANY
REPRESENTED INTERNATIONALLY BY AIRCO COMPANY INTERNATIONAL
Divisions of Air Reduction Company, Incorporated
Dealers and Offices in Principal Cities

If you write maker identify as IEN - 10195

"DYNAMITE"
Armored, Insulated STEAM HOSE

For Greater Resistance to Temperatures, Pressures and Rough Use

STYLE 801. For pressure up to 150 lbs. Tube is special heat-resisting rubber compound, reinforced with continuous spiral of steel wire, and insulated by woven asbestos lining. Cannot buckle or collapse. Carcass consists of plies of selected cotton duck, bonded together by highly efficient adhesive. Cover is two-layer armor of braided wire, surrounded by half-round steel spiral. Sizes ½" to 3". Other styles for higher temperatures and pressures.

"MULCONROY *Starts* WHERE OTHERS *Stop!*"

MULCONROY COMPANY
Hose Specialties Since 1887
5327 JEFFERSON ST., PHILA. 31, PA.

If you write maker identify as IEN - 10196

DO YOU NEED PRECISION ROLLED OR ULTRA-THIN METAL STRIP?

WE ROLL • Beryllium-Copper-Invar • Phosphor Bronze • Copper • Brass • Nickel-Silver • Stainless Steels • Low Carbon Steels • Nickel • Monel • Haynes Stellite Alloys • Magnetic Alloys • Chrome Iron Alloys • and Many Others

WE REGULARLY PRODUCE metal strip up to 8" in width and down to .0005" thin—to tolerances as close as ±.0001".

OUR MODERN EQUIPMENT INCLUDES Sendzimir, 2-High, and 4-High precision rolling mills, precision gang slitters, and continuous atmosphere annealers.

WE CARRY A WORKING INVENTORY of some metals for prompt service. Send us your order for one pound or a thousand—or write for catalog of products and services.

AMERICAN SILVER CO., Inc.
INDUSTRIAL DIVISION
36-03 PRINCE ST. • FLUSHING 54, N. Y.

If you write maker identify as IEN - 10197

ABSOLUTE SECURITY for BOLTED ASSEMBLIES —regardless of VIBRATION or LOAD

Ordinary nut carries the load — PALNUT keeps it tight with DOUBLE-LOCKING SPRING ACTION

Powerful spring tension (A-A) is exerted upward on the bolt threads and downward on the ordinary nut, while slottedjaws(B-B) close in and grip the bolt like a chuck. Nut can not loosen—bolt can not back out.

Write for samples and bulletin #577.
The PALNUT Co.,
59 Cordier St., Irvington 11, N. J.
In Canada:
P. L. Robertson Mfg. Co., Ltd.,
Milton, Ontario

PALNUT TRADE MARK **LOCK NUTS** for quick, secure fastening at low cost

If you write maker identify as IEN - 10198

SUB-MINIATURE PILOT LIGHTS *Approved* for AIRCRAFT AND IMPROVED IN IMPORTANT DETAILS

DIALCO

A great aid to your miniaturization program

SUB-MINIATURE INDICATOR ASSEMBLIES

NON-DIMMING No. 8 1930-621

MOUNT IN 15/32" HOLE
ALL LENS COLORS

Easy lamp replacement with any midget flanged base lamp types

Complete blackout or semi-blackout dimmer types

MECHANICAL DIMMER No. 11 1930-621

THESE ASSEMBLIES LOGICALLY REPLACE LAMPS NO. 319, 320, and 321

PLASTIC PLATE (EDGE) LIGHT ASSEMBLIES

AIR FORCE and BUREAU of AERONAUTICS
MIL-L-7806 DRAWING MS-25010

DIALCO *No. TT-51* (Red filter-black top) or, *No. TT-51A*, complete with No. 327 Lamp

ALSO MADE with other filter colors and with *light-emitting top* (for indication)

ALL OF THE ASSEMBLIES ILLUSTRATED ACCOMMODATE LAMPS NOS. 327, 328, 330, and 331.

ANY ASSEMBLY AVAILABLE COMPLETE WITH LAMP

SAMPLES ON REQUEST — NO CHARGE

Foremost Manufacturer of Pilot Lights

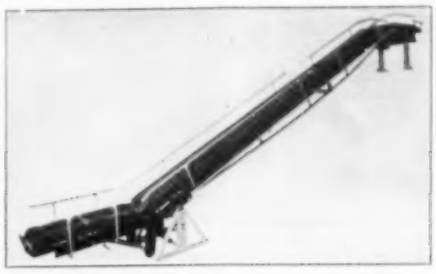
The DIAL LIGHT COMPANY of AMERICA

60 STEWART AVENUE, BROOKLYN 37, N. Y. HYACINTH 7-7600

If you write maker identify as IEN - 10200

CONVEYING . . Reversible belt unit to carry work between two floors

Source: ARROW PRODUCTS INC.
419 Front Ave. N. W., Grand Rapids 4, Mich.



Details and pricing data in sales manual 402

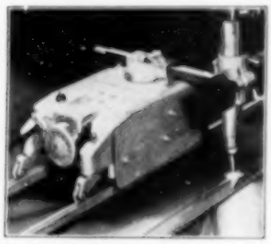
Main section length of this new Arr-O-Veyor ranges from 10 to 40 ft. in increments of 2 feet. Belt width is 12, 16, 20 or 24 inches. Drive at the head end is by a geared-head chain-connected ¾ to 1-hp. motor for standard belt speed of 50 fpm. The conveyor is built upon a pressed steel frame reinforced so it is self-supporting. Adjustable guard rails are available.

Assembly includes an optional power driven feeder section at the take-up end, a single or double nose-over section at the head end, adjustable support brackets for floor or wall mounting and a reversing switch to which a tube is connected for operating control extending along the length of the main section. A ruff-top belt is standard.

If you write maker identify as IEN - 10201

CUTTING . . Acetylene torch machine for straight or curved work outlines

Source: LINDE AIR PRODUCTS CO.
30 E. 42nd St., Room 308, New York 17, N. Y.



Circles to 54 inches

Drive wheels with knurled hardened treads are mounted under the front end of this new Oxweld CM-45 machine, are connected to reversible motor assembled in housing. At the rear are two free swiveling casters to support that end of housing when machine is being moved around a fixed center for circular work.

They lock in rigid position for operation on a track on straight work as shown in the illustration. Drive speed ranges from 4 to 32 ipm. with control at a knob at the rear. A lever operated mechanical clutch disengages the drive for free wheeling action.

The machine weighs 33¼ lb. complete with its torch. It will operate a Type C-58-2 cutting torch capable of cutting through 4 in. of steel. The torch can be set square or at an angle for bevel cutting.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10202

SAVES WHEREVER IT SERVES!

Here's an economical hoist that goes places to give production a lift. It's the *portable* 'Budgit' Aluminum Chain Block. The ½-ton size weighs only 29 lbs. Lift, carry, hang up, operate—all four are a one-man cinch. A hand chain pull of only 25 lbs. lifts 500 lbs. Available in ¼, ½, 1, and 2 tons capacities.

Keep defense production rolling. Get those spot-lifting jobs handled in double-quick time, easily, safely. Use the tough, efficient 'Budgit' Aluminum Chain Block. You'll save on every lift for years to come. All details in Bulletin 398. Write for copy.

MANUFACTURING MAXWELL MOORE TRADE MARK

'Budgit' ® CHAIN BLOCKS

MANNING, MAXWELL & MOORE, INC.
MUSKEGON, MICHIGAN

Builders of "Shaw-Box" Cranes, 'Budgit' and 'Load Lifter' Hoists, and other lifting specialties. Makers of 'Ashcroft' Gauges, 'Hancock' Valves, 'Consolidated' Safety and Relief Valves, and 'American' Industrial Instruments.

If you write maker identify as IEN - 10203

Tell Us Your Production Problems . . . We'll Help You Solve Them

"LOGAN" Rotating and Nonrotating AIR CYLINDERS

Fast-Acting, Positive Controlled Power . . At LOW COST

NONROTATING—
7 STANDARD MOUNTING TYPES

Standard sizes from 1½" to 12" bore; maximum stroke, 18 feet. Special models to meet your requirements.

Logan Features — Larger Parts — More Sturdy Construction — Maximum Power Without Leakage — Permanent Seal Around Piston Rod — Standard Models Available With or Without Cushioning.

ROTATING—

Two Standard Styles — Model R with cast iron body, Model K with light-weight aluminum body.

Bore diameter 1½" to 20", piston stroke 1" to 2"; longer strokes available as special. American Standard adaptations, simple, efficient design to assure positive, rapid, economical operation.

Logan Manufactures 6,975 Standard Cataloged Items

Free Catalog On Request

AIR CONTROL VALVES CATALOG 100-4
AIR CHUCKS CATALOG 70-1
AIR CYLINDERS CATALOG 100-1
AIR and HYDRAULIC PRESSES CATALOG 51
COLLET GRIP TUBE FITTINGS CATALOG 66
HYDRAULIC CONTROL VALVES CATALOG 100-4
HYDRAULIC CYLINDERS CATALOG 100-1, 6450, 100-3
HYDRAULIC POWER UNITS CATALOG 700-1
SUBE-FLOW COOLANT PUMPS CATALOG 84

Let Logan Engineers help you design your Air and Hydraulic Circuits.

Logan *Air and Hydraulic Equipment* LOGANSPORT MACHINE CO. INC. 823 Canton Ave. Logansport, Ind.

FLUID POWER SPECIALISTS SINCE 1916

If you write maker identify as IEN - 10204

WILLSON PRODUCTS, Inc., 217 Washington St., Reading, Pennsylvania

If you write maker identify as IEN - 10205

HASTELLOY alloy D valve castings can be obtained with an ultimate strength of from 110,000 to 125,000 psi and hardness as high as Rockwell C-48. These castings have excellent resistance to sulphuric acid, in addition to their high strength.

Some Penetration Tests for HASTELLOY Alloy D in Sulphuric Acid #

Conc., per cent by weight	20 deg. C.	70 deg. C.	Boiling Point
10	0.00019	0.0015*	0.0011
25	0.00011	0.0011	0.00074
60	0.0000074	0.00026*	0.0074
85	0.00019	0.0039	0.025
95	0.000064*	0.0007*	0.035

inches per month * aerated test

For information on HASTELLOY alloy D castings, and for the name of a manufacturer who can supply you with high-quality valves, write to our General Offices.

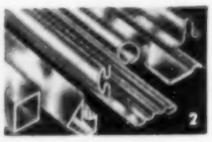
Haynes Stellite Company
A Division of Union Carbide and Carbon Corporation
UCC
General Offices and Plant: Kokomo, Indiana

"Hastelloy" is a trade-mark of Union Carbide and Carbon Corporation.

If you write maker identify as IEN - 10206

Which of these do you use?

(1) ALUMINUM EXTRUSIONS
(2) ROLL-FORMED SHAPES



It's so easy to make WERNER facilities a dependable part of your own production lines.

Simply tell us whether your interest is in ALUMINUM EXTRUSIONS or in ROLL-FORMED shapes of *aluminum, stainless steel, brass, zinc, copper.* You will receive immediately specific, well-illustrated information covering your inquiry—and detailing WERNER capacity for *secondary operations.*

Two strategically located WERNER high-capacity plants are now serving nationally known top companies.*

From WERNER—you'll get highly personalized attention and service. Write Dept. IEN for bulletins. **Names on request.*

Manufacturers: Basic Aluminum Extrusions and Roll formed Products

WERNER ALUMINUM co. inc.

292 FIFTH AVENUE, NEW YORK 16, N.Y. • FACTORIES: GREENVILLE, PA. • OSHAWA, ONT., CANADA

If you write maker identify as IEN - 10207

WEAR 5 TO 10 TIMES LONGER *because they're job-fitted*

On a broach rotor core operation, handling wet broach with coolant that carried sharp slivers, this No. 934 Redmont glove wore 5 times longer than the best glove previously tested, because it *was designed for the condition.*

Extra tough, cut-and-puncture-resistant coating of specially reinforced neoprene (NEOX), not affected by coolant.

30% thicker coating for longer wear

Made snag-proof by bonding to strong fabric base

Improved non-slip grip

Seamless wearing surface

Wing thumb with extra wide span, curved fingers

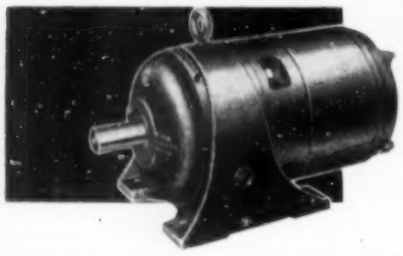
Free Offer: One of the 32 different types of Edmont gloves was designed for your work—anything from the lint-free handling of electrical parts to hot dip plating, heavy castings or sheet glass. Send job description. We will forward free samples of recommended glove, for testing on the job.

Edmont JOB-FITTED GLOVES

Edmont Mfg. Co., 1226 Walnut St. Coshocton, Ohio

World's largest maker of coated industrial gloves

If you write maker identify as IEN - 10208



FOOTE BROS.-LOUIS ALLIS *Gearmotors*

PROMPT DELIVERY! You can count on prompt delivery of Foote Bros.-Louis Allis Gearmotors—the finest Gearmotor obtainable. Superior in design and construction. Available in single, double, and triple reductions to provide output speeds from 780 down to 7.5 r.p.m. Capacities from 1 horsepower through 150 h.p. Available with open, drip-proof, splash-proof, enclosed and explosion-proof motors.

Write for Bulletin G.M.4

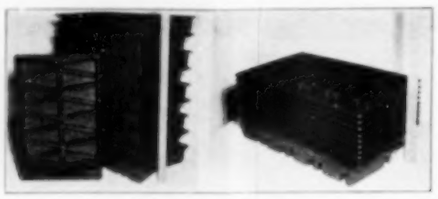
FOOTE BROS. GEAR AND MACHINE CORPORATION
Dept. IEN, 4545 S. Western Blvd. • Chicago 9, Illinois

FOOTE BROS.
Better Power Transmission Through Better Gears

If you write maker identify as IEN - 10209

HANDLING . . Plastic tote box designed and built for specified work

Source: FABRI-KAL CORP.
240-44 E. Kalamazoo Ave., Kalamazoo, Mich.



Rolled edges form gripping handles

Kangaroo Karrier is a new one-piece plastic tote box which the company is prepared to design and manufacture in required quantities to protect and handle work in process. The box is available in various colors for department or product identification. It can be made with partitions to separate individual work pieces and in any required dimensions. In the event that a box already designed will suit given needs there is no tool charge.

The box shown in the illustration carries diagonal partitions with triangular shelves in the center at one end and in the two corners at the opposite end. Mating boxes are designed so they will either nest into those below them or by turning them end to end will rest upon the end shelves for work stacking in storage. The material is not subject to chipping, warping or splintering. It is light in weight, waterproof, stain proof, shatter proof and chemically resistant.

If you write maker identify as IEN - 10210

FASTENING . . Magnetic latch to hold a door in closed position

Source: HEPPNER SALES CO.
752 Burton Ave., Round Lake, Ill.

Four screws place it

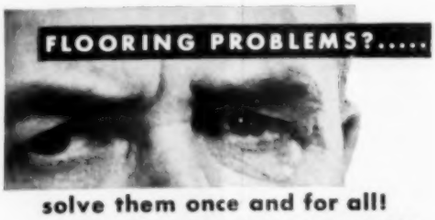
Permanent magnet, mounted in a bracket holder to secure to a door frame, and a spring mounted striker plate, to mount on the door, comprise the two parts of this new magnetic door latch. The spring assembly for the striker plate assists the user in opening the door by tipping the plate slightly away from the magnetic pull when opening effort is applied. The spring action also absorbs closing impact. Holding power of the Alnico magnet is rated at 4 pounds. Recommended installation is at the top of the door as in the illustration.

Identify as IEN - 10211

Ribbon is placed diagonally across the corners of a rectangular cardboard and is adhered on the opposite face by a new U. S. Engineering automatic machine. Ribbon width can vary from $\frac{1}{16}$ to $\frac{7}{16}$ inch. Insertion of the cardboard starts the machine to wrap one corner at a time.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10212



solve them once and for all!

SEND TODAY FOR YOUR FREE COPY

INSTRUCTIONS for laying KLEMP HEXTEEL and FLOORSTEEL

the miracle floor base that adds years of life!

When mastic or concrete is poured into the mesh of either of these rugged floor armors, industries are constantly writing "period" to previous flooring problems. Truck wheel pounding doesn't break up a Klemp armored floor!

HEXTEEL®

The Klemp instruction booklet is written to help you make a thorough analysis of your own particular flooring problems. Before making further arrangements, take advantage of Klemp's free engineering services. Many nationally known companies have followed this practice, and, as a result, floors reinforced with HEXTEEL or FLOORSTEEL are still in perfect condition after 25 years.

FLOORSTEEL®

KLEMP METAL GRATING CORP.
Executive Offices: 1375 North Branch Street, Chicago 22, Illinois

If you write maker identify as IEN - 10213

*flamefoil** finished CANVAS for PROTECTION

RESISTANT to
- **FIRE**
- **WATER**
- **WEATHER**
- **MILDEW**

Flamefoil canvas gives extra margin of safety against fire in your plant. . . . . reduces your losses.

SEND AT ONCE FOR BOOKLET "FLAME RESISTANT FABRICS"

**Manufactured under Patents Nos. 2,044,176 and 2,299,612 . . . . . others pending.*

PHILADELPHIA TEXTILE FINISHERS, Incorporated
102 LAFAYETTE STREET
NORRISTOWN, PA.

If you write maker identify as IEN - 10214

SAFETY FOR YOUR MEN... VALUE FOR YOU with U. S. NEOPRENE GLOVES

They help prevent costly accidents. • They withstand gasolines, oils, greases, and corrosive chemicals such as sulphuric, chromic, and muriatic acids, caustic and plating solutions. • The rough-surface fingers assure positive easy gripping. • They're comfortable because the curved finger construction conforms to the natural curve of hand, eliminates straining and pulling. Highly flexible, they permit easy, natural working motions. These "U. S." gloves withstand tough service. Full range of sizes, lengths and weights. "U. S." technical men will be glad to analyze your glove needs and recommend the correct glove for *your* job.

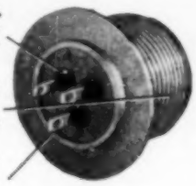
U.S. INDUSTRIAL GLOVES

UNITED STATES RUBBER COMPANY

If you write maker identify as IEN - 10216

CANNON PLUGS *hermetically sealed*

Cannon Type "GS" (glass sealed) connectors are hermetically sealed for use on position indicators, tachometers, and other instruments that must be sealed to avoid moisture condensation resulting from sudden altitude change or other causes.



Dept. I-112

Request Bulletin No. GS-2 for engineering data.

CANNON ELECTRIC

3209 Humboldt Street, Los Angeles 31, California. Canadian factory: Toronto, Ontario. World export: Frazar & Hansen, San Francisco, New York and Los Angeles.

If you write maker identify as IEN - 10217

If you write maker identify as IEN - 10218

Stop pushing. Snow throwing is the most modern, efficient way to get rid of snow—SAVE TIME and CUT COSTS this winter. Maxim Snow Throwers eat into the snow and disperse it up to 40 feet away in either direction, and hence eliminate built-up snow banks along edge of path or roadway. Four husky models, 4.6 hp. to 46 hp. Over 2,000 in use in 32 states. Five years winter-proven in actual use.

GET THE FACTS

THE MAXIM SILENCER COMPANY
71 Homestead Ave., Hartford 1, Conn.

Name .....

Address .....

If you write maker identify as IEN - 10219

CONTROL . . Multiple turn dial for position adjusting and indicating

Source: HELIPOT CORP.
914-18 Meridian Ave., South Pasadena 12, Calif.

No backlash

Duodial Model RA is a new design in the company's line of knob adjusted turn indicating controls. It was initially developed for application on the company's own Helipot potentiometer but can be applied with any multi-turn device equipped with a ¼-in. shaft. The knob and inner dial are graduated from 0 to 100. The outer dial reads from 0 to 15. Only three of the numbers on the outer dial appear in the reading opening at one time. At the side is a locking lever that can be turned through a small arc to secure a set position.

One complete turn of the inner dial moves the outer dial forward or backward one digit. Outside diameter of the new unit is 1 11/16 inches. Height above a panel face on which the dial is mounted measures 1 inch.

If you write maker identify as IEN - 10220

CONVEYING . . Static free belt, conductive neoprene coated on canvas

Source: MAIN BELTING CO.
1239 Carpenter St., Room 260, Philadelphia 47, Pa.

Improves action and protects

Mark 40 designates a new conveyor belt made of 37½ or 39-oz. duck in widths to 108 in. and in any length. The external coating of conductive Neoprene dissipates any static charge before it can be built up. Grounding wires or special static equipment are not required. In the event that the coating wears through, after a long period of service, it can be recoated in place.

If you write maker identify as IEN - 10221

SOLDERING . . Small electric iron, 1/8 in. tip, has 25 watt rating

Source: HEXACON ELECTRIC CO.
155 W. Clay Ave., Roselle Park, N. J.

List price is $5

Catalog P-25 designates a new electric soldering iron that weighs 3 oz. without its cord and mounts a ⅛-in. tip for application on instruments, electronic devices, jewelry. Heat is supplied by a mica-wound element designed for constant duty. Element, tip and other parts can be replaced by the user. Operation is on 110 or 220-volt ac. or dc. as specified.

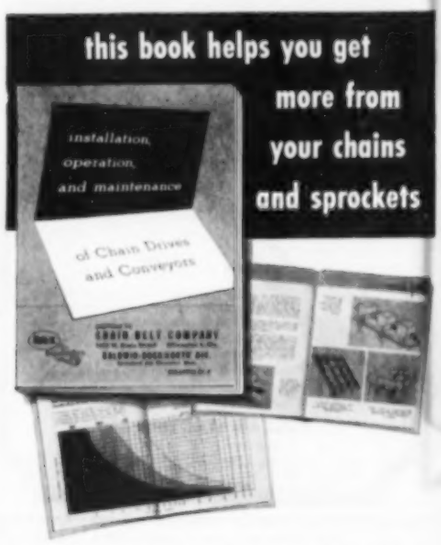
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10222

If you write maker identify as IEN - 10223

If you write maker identify as IEN - 10224

MAINTENANCE MEN!



Here's just what you're looking for to help you get longer life from your chain drives and conveyors. This new pocket-size handbook is packed with useful tips that are of real value.

There are chapters devoted to installation, lubrication, operation, repair and storage as well as a number of helpful sketches, charts and graphs. One novel feature is a detailed check chart on "Cures for Sick Chains." It's a book you'll want and keep, and it's yours for the asking. Send for your copy today.

REX *Just use the coupon*

BALDWIN-REX

Chain Belt COMPANY
OF MILWAUKEE

Chain Belt Company 52-407A
4675 W. Greenfield Avenue, Milwaukee 1, Wis.
Gentlemen: Please send me ( ) copies of your Bulletin 51-7.

Name .....

Company ..... Dept. .....

Address .....

City ..... State .....

If you write maker identify as IEN - 10226

ONE MAN Lifts 800 POUNDS

It takes but little effort for trucker to pick up and move containers weighing up to 800 pounds, and you save the labor of helpers when your shop or warehouse is equipped with

SABIN BARREL TRUCK

You simply run truck up to container, hook on at top and pull back on handle to pick up load. Third Wheel Feature provides better balance and added safety in moving loads.

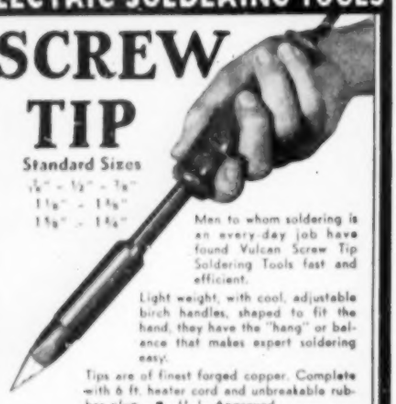
Order one of these trucks today and you'll soon want more.

WRITE FOR BULLETIN NO. 48-A

THE SABIN MACHINE CO.
6546 Carnegie Avenue
Cleveland 3, Ohio

If you write maker identify as IEN - 10227

VULCAN
ELECTRIC SOLDERING TOOLS
SCREW TIP



Standard Sizes
1/8" - 1/2" - 7/8"
1 1/8" - 1 3/8"
1 5/8" - 1 3/4"

Men to whom soldering is an every-day job have found Vulcan Screw Tip Soldering Tools fast and efficient.

Light weight, with cool, adjustable birch handles, shaped to fit the hand, they have the "hang" or balance that makes expert soldering easy.

Tips are of finest forged copper. Complete with 6 ft. heater cord and unbreakable rubber plug. • U. L. Approved.

VULCAN ELECTRIC CO.
DANVERS 8, MASS.

Vulcan Electric Soldering Tools, Solder Pots, Glue Pots, Branding Irons, Vulcan Electric Heating Elements.

If you write maker identify as IEN - 10228

GET THESE
MONEY SAVING FACTS

LEARN HOW YOU CAN FORM-TRUE GRINDING WHEELS UP TO 3" WIDTH AND 20" DIAMETER . . .
. . . ACCURATE TO "TENTHS"
. . . SIMPLY AND INEXPENSIVELY
. . . IN A FRACTION OF THE TIME REQUIRED NOW WITH A

PRATT & WHITNEY
MODEL 4 diaform
WHEEL FORMING ATTACHMENT

You can produce accurate split dies, punches and flat forming tools in hours instead of days by form grinding when you can form-true grinding wheels exactly to specifications quickly and without costly cut-and-try procedures. Saving Time Is Saving Money. You'll find the answer in the Pratt & Whitney Circular No. 548 that describes the new P&W Model 4 DIAFORM Wheel Forming Attachment.

SEND FOR YOUR COPY TODAY!

PRATT & WHITNEY
DIVISION NILES-BEMENT-POND COMPANY
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Please send my free copy of Circular No. 548.
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NEW LITERATURE

Brief reviews to advise you of available new information published by the manufacturers covering products they offer for your use. Each includes identification, size of the material, information it contains so you can judge its value to you.

ALUMINUM . . Standard alloys for sand, permanent-mold, die casting applications; compositions, mechanical properties, heat treatments. "Aluminum Alloys", 9 sheets. Apex Smelting Co., 2535 W. Taylor St., Chicago 12, Ill. **IEN-0941**

BEARINGS . . Tiny ball bearings, minimum o. d. to .100 in.; dimensions, load ratings on 10 series including radial, pivot, thrust. Catalog 52-B, 4 pages. Miniature Precision Bearings, 103 Carpenter St., Keene, N. H. **IEN-0942**

BEARINGS . . Cam follower rollers with threaded stud, .5000 to 3.250 in. roller o.d.; cut-away view, size table, bearing details, applications. Bulletin E-157, 4 pages. Smith Bearing Co., 652 Bear Tavern Road, Trenton, N. J. **IEN-0943**

BELLOWS . . Made of stainless steel for aircraft use; seven application examples, notes on permissible construction variations. "Sola-Flex", 4 pages. Solar Aircraft Co., 2202 Pacific Highway, San Diego 12, Calif. **IEN-0944**

BORING . . Adjustable holders for company's boring tools on turret lathes and screw machines; sizes, drawings, list prices, notes on use. Catalog 483-1, 4 pages. Bokum Tool Co., 14773-77 Wildemere Ave., Detroit 21, Mich. **IEN-0945**

BUILDINGS . . Shatterproof corrugated plastic panels for skylights and windows; properties, mounting methods, sizes, colors, examples. Bulletin, 4 pages. Corrulux Corp., P. O. Box 20026-A, Houston 25, Texas **IEN-0946**

BURNERS . . "Combinetic" gas and oil burner, interchangeable instantaneously, four sizes 8.8 to 17.6 gph. oil; construction points. Bulletin B-9, 4 pages. Webster Engineering Co., 111-15 S. Frisco, Tulsa, Okla. **IEN-0947**

CABLE . . Spring-coil extension cord for electric power supply; recommended procedures for its use on suspended power tools and on hoists. Bulletins 1 and 2, 2 pages. Koiled Kords Inc., Box KK, Hamden, Conn. **IEN-0948**

CASTERS . . Capacities from 150 to 3,000 lb.; selector index and ratings, also steel and soft wheels, platform and hand trucks. Catalog CT-52, 36 pages. Rapids-Standard Co., 342 Rapistan Bldg., Grand Rapids 2, Mich. **IEN-0949**

CONDUIT FITTINGS . . Watertight floor boxes, adjustable and fixed, also pipe and conduit hangers, cable support clamps, fish wire. "Latrobe Products", 4 pages. Fullman Mfg. Co., 1211-13 Jefferson St., Latrobe, Pa. **IEN-0950**

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10229

FREE TRIAL SHOWS HOW!

SHAKEPROOF
"SPEED-NUTS*"
SAVE TIME . . . REDUCE COSTS!

Designed to clip quickly and easily in place, SHAKEPROOF "SPEED NUTS" eliminate costly riveting, staking or welding operations. Light weight and easy handling speeds assembly.

SEND FOR FREE TEST KIT NOW!

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"Fastening Headquarters" TRADE MARK
A DIVISION OF ILLINOIS TOOL WORKS
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MATOT "DUMB WAITERS"

Space, time, labor and related savings are practically unlimited with MATOT "Not-so-dumb" dumb waiters—in factories, stores, institutions, hotels, restaurants—and also *in the home*. A MATOT dumb waiter takes up little room, requires comparatively light construction and can be hand or power operated—at minimums of both effort and current. See comprehensive SWEET'S CATALOG FILE, or write for free data.

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MILITARY PACKAGING of generating equipment is speeded by DOUGHBOY Power Hand Sealers at the Minneapolis plant of D. W. Onan & Co.

NEW PORTABLE HEAT SEALER ELIMINATES "SKIPPING"

Mounting bracket converts sealer into a bench-type unit.

Here's an inexpensive, lightweight heat sealer that gives you all the advantages of heavy installations. It's the new DOUGHBOY Power Hand Sealer, a motor-driven rotary sealer that guarantees a continuous dwell for the entire length of the seal. Adequate speed (200 inches per minute) enables operator to seal every inch uniformly, with none of the lapses encountered with manually controlled devices.

Three models handle all types of heat-seal materials. Further details sent on request to

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Mechanical Division • New Richmond, Wisconsin

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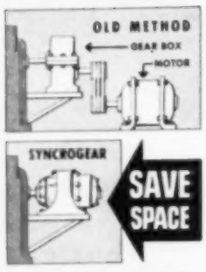
SAVE SPACE

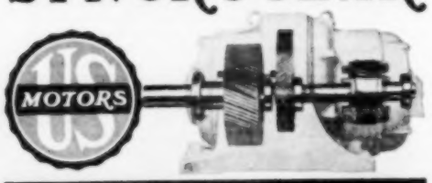
Instead of using an external gear box or old fashioned open belts and chains, now you can install a U. S. Syncrogear Motor with built-in gears. You save space. Gears are fully enclosed and hardened for long-life service. Pyramidal structure insures permanent alignment.



10 to 10,000 RPM
1/4 to 30 h.p.

Write for Bulletin

SYNCROGEAR



U.S. ELECTRICAL MOTORS Inc.
Box 2058, Los Angeles 34, Cal. Milford, Conn.

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Let the Figures Prove How Much More You Save With "Keyed-For-the-Job" Automatic Trucks

There's only one RIGHT truck for each material handling job....and Automatic has the experience and know how that saves you money with trucks "Keyed-for-the-Job"

From the smallest to the largest truck . . . from the lightest to the heaviest products to be moved, lifted or tiered, expect the *right* truck from Automatic . . . an electric truck *"keyed-for-your-job"* and *your job alone!*

Put Automatic electric trucks to work in your plant, and let the figures prove that Automatic Trucks cost so little to operate, so little to maintain. Write for facts on Automatic "Keyed-for-the-job" electric trucks.

Automatic®
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Automatic® ELECTRIC TRUCKS

WORLD'S LARGEST EXCLUSIVE BUILDER OF ELECTRIC INDUSTRIAL TRUCKS

If you write maker identify as IEN-10234

WHICH DO YOU DO?

LOADING & UNLOADING
SHEET FEEDING
WORK POSITIONING
DIE HANDLING

RAYMOND
PORTABLE Hydraulic ELEVATING TABLE

FITS ALL FOUR!

No table has so many practical uses as this RAYMOND Portable Hydraulic Elevating Table! Use it for positioning or handling throughout the plant . . . see how it lightens your work load. RAYMOND Hydraulic Elevating Table has sturdy 30" square top which can be rotated when desired.

Convenient foot pump simplifies raising and lowering, leaves operator's hands free. Smooth-rolling casters make table highly portable. Floor lock holds it securely in place. Standard Model elevates from 28" to 44"; Telescopic Model from 28" to 50". Both models have 2,000 lb. capacity.

SEND FOR BULLETIN 232

. . . it gives you the facts on this RAYMOND Portable Hydraulic Elevating Table. Write for it today.

RAYMOND

ELECTRIC INDUSTRIAL TRUCKS • HYDRAULIC ELEVATING EQUIPMENT
The RAYMOND CORPORATION
Formerly LYON-Raymond Corporation
3569 Madison St., Greene, N.Y.

NEW LITERATURE—Continued

CONNECTORS . . Crimp-type solderless terminals for wire; steps in quality control from raw material to finished job. "Quality Control", 12 pages. Aircraft-Marine Products Inc., 2102 Paxton St., Harrisburg, Pa. IEN-0951

CONNECTORS . . Potheads and terminals for electric cable to 46 kv.; design points, drawings, ratings. Catalog C-79-13, letterhead request, 100 pages. Anaconda Wire & Cable Co., 25 Broadway, Rm. 1870, New York 4, N. Y. IEN-0952

CONNECTORS . . Electrical terminal boards and lugs, electronic hardware, tools; dimension drawings, specifications. Catalog 400, 102 pages. Cambridge Thermionic Corp., 470 Concord Ave., Cambridge 38, Mass. IEN-0953

CONNECTORS . . Electric plugs, receptacles, accessories for audio circuits; data on S series, contacts, ratings. Bulletin PO-4-1952, 32 pages. Cannon Electric Co., P. O. Box 75-A, Lincoln Heights Station, Los Angeles 31, Calif. IEN-0954

CONNECTORS . . Electric terminal block that assembles from interlocking units for a desired number of sections; drawings, test data, instructions. "Add-A-Point", 4 pages. Wama Co., 1949 Industrial Bldg., Baltimore 2, Md. IEN-0955

CONSTRUCTION . . "Adjusta-Wate" Moto-Mixer truck-mounted concrete mixer; construction features from drive to discharge hopper. Bulletin 52-32, 8 pages. Chain Belt Co., 4703 W. Greenfield Ave., Milwaukee 1, Wis. IEN-0956

CONTRACT WORK . . In design, engineering, manufacturing from tiny gears to aircraft engines; facilities, examples. "Let's Look at Lycoming", 16 pages. Lycoming Spencer Div., 752 Oliver St., Williamsport 19, Pa. IEN-0957

CONTROLS . . Edge-position control for a moving web or sheet; description, sensing element, installation schematics. Bulletin 141, 4 pages. Askania Regulator Co., 238-42 E. Ontario St., Chicago 11, Ill. IEN-0958

CONTROLS . . To change starting sequence on 3 to 12 pumps, blowers, compressors, burners; how-it-works description, circuits. Bulletin 7110, 4 pages. Automatic Control Co., 1003-7 University Ave., St. Paul 4, Minn. IEN-0959

CONTROLS . . "Eyematic" combustion control for oil-fired boilers; schematic drawing, operating description, uses. Bulletin 22, 8 pages. Brooke Engineering Co., 4515-19 Wayne Ave., Philadelphia 44, Pa. IEN-0960

CONTROLS . . "Pyr-O-Vane" time-proportioning temperature control for heat treating operations; control characteristics, ranges. Bulletin 1052, 8 pages. Brown Instruments, 4456 Wayne Ave., Philadelphia 44, Pa. IEN-0961

CONVERTERS . . For ac. power from dc. source; ratings on units to 250 watts, also 400-cycle units; general application information. Catalog 452, 16 pages. Carter Motor Co., 2642-46 N. Maplewood, Chicago 17, Ill. IEN-0962

CONVEYING . . Rubber-fabric belt with non-skid top to carry packages or parts at inclines of 25 to 30 deg.; specification summary. "Tread-Top Belting", 4 pages. Baldwin Belting Inc., 76 Murray St., New York 7, N. Y. IEN-0963

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If you write maker identify as IEN-10236

Toughened FOR EXTRA WEAR...POSITIVE POWER

EXCLUSIVE ATLAS TOUGHENING PROCESS GIVES EXTRA STRENGTH FOR RUGGED SERVICE

On power transmission drives throughout industry, Atlas "Super Life" Roller Chain is giving extra wear . . . delivering efficient, positive power. Atlas Chain is heat-treated by an exclusive hardening process, which builds in greater strength and wear resistance than conventional hardening. Gives long life, maximum service under severest operating conditions. On all types of machine drives, Atlas Chain transmits power smoothly and efficiently. Positive "no slip" sprocket grip makes possible delivery of full rated horsepower without slippage or friction.

Write for book No. ARC-521-E.N.
ATLAS CHAIN & MANUFACTURING COMPANY
PHILADELPHIA 24, PENNA.

ATLAS ROLLER CHAIN

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Where Does the Mercury Automatic Clutch Fit into Your Design?

It fits perfectly . . . if your product is powered by an electric motor or gasoline engine. A Mercury Clutch makes starting easier and smoother, particularly of inertia loads, saving starting current or fuel. Most important, the addition of a Mercury Automatic Clutch gives your salesmen and distributors a powerful selling argument for your product.

A Mercury Automatic Clutch installed on a Chain Saw.

Get the Facts about Mercury Automatic Clutches

Ask our engineers to show you how a Mercury Automatic Clutch will improve the operation of your product at a small added cost. Write today for Mercury Catalog C-12.

MERCURY CLUTCH DIVISION
AUTOMATIC STEEL PRODUCTS, INC.
CANTON 8, OHIO

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With Schrader Press Controls Safety and Production go Hand in Hand

Operator confidence soars—and so does production—with the Schrader Press Control. Definitely a two-hand device, it is designed so that the hands that feed the die must also operate the press. Neither valve can be tied down to get one-hand operation.

This *increased safety* of Schrader's Control lets operators build a worry-free rhythm that puts new speed in your presses in just a short time.

Get details on Schrader Two-Hand Press Controls—and other Schrader hand and foot-operated controls—in the Schrader catalog. Write for it today.

A. SCHRADER'S SON
Division of Scovill Manufacturing Company, Incorporated
458 Vanderbilt Ave., Dept. D-40, Brooklyn 17, N. Y.

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Makes "Women's Work" of Handling DOUBLE-FACED PALLETS

Magic "Toggle-Booster" floats the truck into the pallet with minimum jolt or jar.

Easiest, quickest way to handle palletized loads—for short hauls, spotting loads or in congested areas. Just roll the truck into the pallet, lift the load and roll it away. Short stroke pump projects rear wheels through bottom face of pallet—lifts any load up to 4000 lbs. easily.

the SERVICE LEVER-LIFT*

*Write for Circular 411.

INDOOR WHEELS Made EASIER and SAFER

SERVICE CASTER & TRUCK CORP.
Executive Offices: Albion, Michigan
Plants at Albion, Michigan & Somerville 43, Mass.
See Your Classified Telephone Directory For Nearest Distributor

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ARMSTRONG Carbide TOOL HOLDERS

FOR HIGHER SPEEDS AND HEAVIER FEEDS

ARMSTRONG Carbide Tool Holders and ABMIDE (Carbide) Tipped Cutters come in cased sets for tool rooms and maintenance departments, and individually in all sizes for general machine shop and production turning. They permit not only the ready machining of sand-filled castings, the hardest and toughest steels as well as many heretofore "unmachinable" materials, but also make practical much heavier cuts and cutting speeds up to 600 f.p.m. on ordinary work. They also run from 10 to 100 times as long between regrindings.

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ARMSTRONG BROS. TOOL CO.
"The Tool Holder People"
5243 W. ARMSTRONG AVENUE, CHICAGO 30, U. S. A.
NEW YORK • SAN FRANCISCO

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in just 3 seconds

. . . you can read any surface temperature in your plant . . . accurately and easily . . . with the Alnor Portable Pyrocon.

Compact in size, complete in precision design and workmanship, this rugged instrument assures the highest standards of speed, accuracy and dependability. You can take temperature readings on materials in process, the finished product or the heated equipment itself—in as few as 3 seconds!

Alnor Portable Pyrocons come in scale ranges to 2000° F., with thermocouples for every application. You'll find full details on the Pyrocon exactly suited to your operations in Bulletin 4257. Send for your copy now. Write: Illinois Testing Laboratories, Inc., Room 517, 420 N. LaSalle St., Chicago 10, Ill.

Alnor PRECISION INSTRUMENTS FOR EVERY INDUSTRY

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CUT STEAM COSTS

SAVE FUEL and MAN-HOURS!

Thousands of Powermaster users are now getting top efficiency and low-cost steam or hot water for processing and heat after replacing out-of-date boilers with this modern, fully automatic, "packaged" steam generator.

- High efficiency cuts operating costs as much as 40%
- Packaged design saves excessive installation costs
- Automatic operation frees engineer for other duties
- Mounted on steel base—no bricking required
- Delivered fully wired and factory-tested
- Prompt service by factory-trained men

15 to 500 HP—FOR HOT WATER AND FOR STEAM UP TO 250 P.S.I.—for light oil, heavy oil, gas and combination gas-oil firing. Built to A.S.M.E. specifications and approved by Underwriters' Laboratories.

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CONVEYING . . Tramrail equipment for overhead material handling; details on components and how they can be applied. Booklet 2008-H, 12 pages. Cleveland Crane & Engineering Co., 1137 E. 283rd St., Wickliffe, Ohio **IEN-0964**

CONVEYING . . Package and bulk-handling belt conveyors; application examples and user reports on a variety of installations. Booklet, "Owners Report", 24 pages. A. B. Farquhar Co., 140-44 N. Duke St., York, Pa. **IEN-0965**

CONVEYING . . "Streamliner" gravity wheel conveyors; types, ratings, curves, stands, applications. Bulletin 201, copyright 1948, reprinted 1952, 24 pages. Harry J. Ferguson Co., 125 West Ave., Jenkintown, Pa. **IEN-0966**

CONVEYING . . Picture book shows uses for roller, wheel, belt, chain, overhead, elevating, spiral conveyors, specials. Catalog 852, 32 pages. Mathews Conveyer Co., 191 Tenth St., Ellwood City, Pa. **IEN-0967**

CUTTING . . "Hefti-Cut" clamped-tip carbide turning tool in styles for straight, plunge-cut, shoulder work; sizes, dimensions, list prices. Bulletin 52-800, 4 pages. DeAll Co., 252-56 N. Laurel Ave., Des Plaines, Ill. **IEN-0968**

CUTTING . . Carbide-tipped adjustable-head lathe tools, also solid carbide boring tools, gage contact points; sizes, dimensions. Bulletin, 8 pages. Eastern Tool Co., 304-8 Tolland St., East Hartford 8, Conn. **IEN-0969**

CUTTING . . Carbide-tipped tools for turning, boring, planing, milling; specifications, list prices, application suggestions, also tool tips. Catalog 52, 68 pages. Kennametal Inc., 100 Lloyd Ave., Latrobe, Pa. **IEN-0970**

CUTTING . . Abrasive cut-off machines for foundry, metal-working, special uses; specifications on units from 3 to 20 hp., applications. "Tabor-Brasive", 16 pages. Tabor Mfg. Co., 6222 Tacony St., Philadelphia 35, Pa. **IEN-0971**

DRILLING . . Carbon and high-speed steel drill bits; descriptions and list prices on individual bits and assortments. Catalog 52-A, 4 pages. Century Drill & Tool Works, 309-13 S. Green St., Chicago 7, Ill. **IEN-0972**

DRIVES . . Flexible shaft coupling, $\frac{1}{8}$ to $1\frac{11}{16}$-in. bore; details on crown design of connecting bolts, sizes, capacities. Bulletin 2200, 4 pages. De Laval Steam Turbine Co., 851-55 Nottingham Way, Trenton 2, N. J. **IEN-0973**

DRYING . . Machine to dry, cool, process bulk material from coal to foods; description on "Multi-Louvre" design, operation, ratings. Book 2400, 24 pages. Link-Belt Co., 305-9 N. Michigan Ave., Chicago 1, Ill. **IEN-0974**

DUST COLLECTING . . Equipment to remove dust and fumes from process operations; 33 examples. "Industry Relies on Dustube", 24 pages. American Wheelabrator & Equipment Corp., 1119 S. Byrkit St., Mishawaka, Ind. **IEN-0975**

ELEVATORS . . Portable hand hydraulic unit, 1,000 lb. capacity, 4-ft. lift; review of design and construction points. "Century 1000", 4 pages. Century Products Co., 3627 Highway No. 7, Minneapolis 16, Minn. **IEN-0976**

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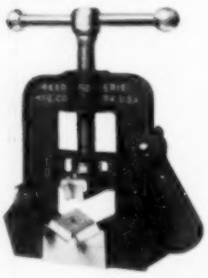
If you write maker identify as IEN-10243

Built to last!

REED

LONG JAW PIPE VISES
Work Better, Faster, Easier.



Wrench action of patented, long-bearing jaws holds any pipe firmly without crushing or marring. Lower jaws are reversible for double service. Patented features end lost motion. Precision machined throughout. *Ask your jobber.*

Remember . . . In a vise or pipe tool, if it's a REED . . . it's RIGHT!

REED
MANUFACTURING COMPANY
ERIE, PENNSYLVANIA

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"DIX-LOCK"

Quick-Acting, Streamlined AIR HOSE COUPLING

A modern, efficient coupling for all factory and field air lines up to $\frac{3}{4}$". Made of rustproof steel or bronze. Light weight, yet strong and durable. Snap-lock action . . . quarter turn against spring tension; reverse quarter turn to unlock. Hose ends; male and female I. P. T. ends. Completely interchangeable.

From Your Hose Supplier or Industrial Distributor

DIXON VALVE & COUPLING CO.
PRODUCERS OF *The Quality Line* COUPLINGS • NIPPLES • MENDERS • CLAMPS
"BOSS" "GJ-BOSS" "DIXON" "KING" "AIR KING" "DIX-LOCK"
PHILADELPHIA, PA. BRANCHES: CHICAGO • BIRMINGHAM • LOS ANGELES • HOUSTON

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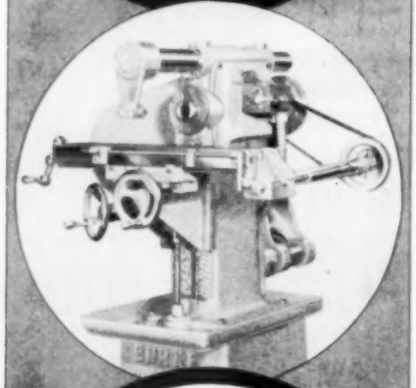
SPEED PRODUCTION OF SMALL PARTS AT SMALL COST *with dependable*

BURKE BENCH MILLERS



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THE Burke MACHINE TOOL CO.
A Division of U. S.-BURKE MACHINE TOOL CO.
BROTHERTON ROAD 5, CINCINNATI 27, OHIO

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ACE PRECISION NYLON BALLS

Holley Carburetor Co., Detroit, uses Ace Nylon Balls as check valves in carburetors to permit a higher degree of spark advance.

For the first time . . . DuPont Nylon FM # 10001 balls mass-produced to close tolerances. The result . . . toughness at low temperatures, form stability at high temperatures, light weight, chemical and abrasion resistance.

SIZES 1/8" - 3/4"
TOLERANCES ± .001

Hundreds of Industrial Applications! Let our engineers advise you. *Request samples and bulletin TODAY*

ACE PLASTIC COMPANY
Precision Plastic Fabricators and Extruders
91-24 VAN WYCK BLVD. • JAMAICA 2, N. Y.

If you write maker identify as IEN - 10248

When you think of
STAINLESS STEEL FASTENINGS
think first of
ANTI-CORROSIVE

Anti-Corrosive has millions of stainless steel fastenings *in stock* for immediate delivery . . . plus exceptional production capacity that can fill your requirements beyond stock items faster, *better!*

FREE — Write for Slide-Chart 52T which instantly identifies A.N nos. pertaining to stainless fastenings.

25 YEARS OF EXPERIENCE IN FASTENINGS OF STAINLESS STEEL

Anti-Corrosive Metal Products Co., Inc.
Manufacturers of STAINLESS STEEL FASTENINGS
CASTLETON ON HUDSON, NEW YORK

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Get clean cut threads

EVERY TIME!

No. 00, Ratchet 1/8" to 3/4" pipe

Do the job right—with advanced features of Toledo Pipe Tools and Power Pipe Machines to produce smooth, clean-cut threads for trouble-free jobs. Unbeatable for easy cutting, easy handling . . . designed to speed the work . . . save labor . . .reduce costs! Use the finest—Toledo Tools—and be ahead in economy, because of extra long life with Toledo dependability. The Toledo Pipe Threading Machine Co., Toledo, Ohio.

RELY ON THE LEADER **TOLEDO**
Pipe Tools . . . Power Pipe Machines . . . Power Drives

If you write maker identify as IEN - 10250

HEATING . . Gas-oxygen burner for laboratory use, operates quietly

Source: FISHER SCIENTIFIC CO.
719 Forbes St., Pittsburgh 19, Pa.

Pilot burns steadily

Standard Blast designates one of two new designs in the company's line of adjustable burners for use in fabricating glass, laboratory apparatus and for general operations including crucible ignition, ore fusing, coke button testing. The standard design employs an individual control valve for both the inner and the outer gas flames and a third individual valve for oxygen control. This unit is suited for glass tube work to 2 in. in diameter.

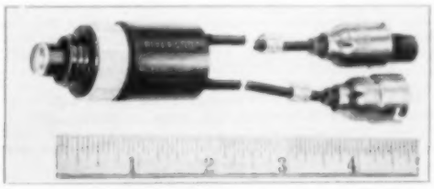
Master Blast, the second of the two new designs, is a combination of two independent burners built concentrically into the same body. Gas and oxygen are supplied to the inner burner by a pair of valves for a small flame. A second set of valves controls gas and oxygen to the outer burner for intermediate or larger flames of either annealing or sealing type. This burner can be employed to work tubing measuring 1/4 to 3 in. in diameter.

Both burners measure 7 in. in overall height, are equipped with heat resistant fiber adjusting handles on the valves. Mounting is on a cast iron base with a ball and socket joint to permit lateral and vertical movement. Two types will handle gases rating 300 to 1,500 btu. per cu. ft. and 1,500 to 2,500 btu. per cu. ft. in heating value.

If you write maker identify as IEN - 10251

SWITCH . . Water proof push button rates 10 amperes at 110 volts ac.

Source: RIVERSIDE MFG. & ELECTRICAL SUPPLY CO.
10226-30 Michigan Ave., Dearborn, Mich.



It can be operated under water

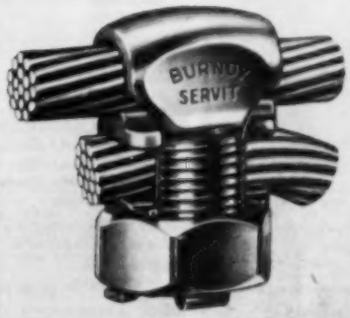
Molded rubber completely encloses the body of this new switch. Ordnance type water proof leads are vulcanized into the rubber. Water proof connectors can be assembled to the leads when specified. The inner assembly contains a threaded barrel 1/2 in. in diameter which is inserted through the hole from behind a panel. A protective cap for the push button end of the switch threads over this barrel to form a tight seal.

Overall length is about 2 inches. Largest body diameter is 11/16 inch. The switch can be supplied either normally open or normally closed. It can be employed in temperatures between minus 65 and plus 165 deg. F.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10252

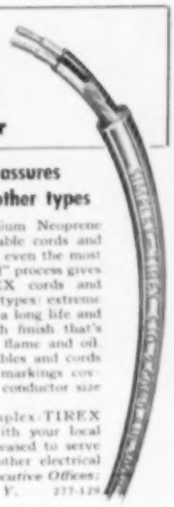
connectors for ALUMINUM



BURNDY
BURNDY ENGINEERING CO. INC.
NORWALK, CONNECT.

If you write maker identify as IEN - 10253

Simplex-TIREX PORTABLE CORDS . . . via Graybar



"Cured-in-lead" process assures superior performance over other types

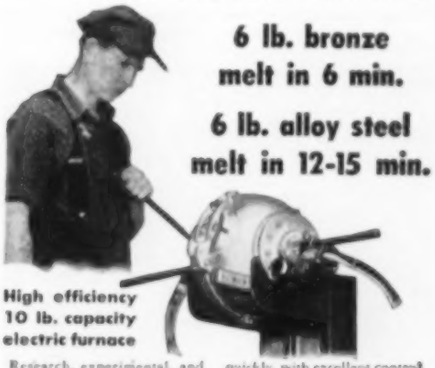
Protected by "cured-in-lead" Selenium Neoprene Armor, tough Simplex-TIREX portable cords and cables provide superior service under even the most rugged conditions. This "cured-in-lead" process gives Graybar-distributed Simplex-TIREX cords and cables distinct advantages over other types: extreme flexibility without distortion . . . extra long life and uniformity . . . *plus* a satin-smooth finish that's highly resistant to abrasion, impact, flame and oil.

As a further feature, these fine cables and cords have molded right into the jacket, markings covering the number of conductors . . . conductor size . . . and type of cable or cord.

For complete information on Simplex-TIREX portable cables and cords, check with your local Graybar Representative. He'll be pleased to serve you in this as well as all of your other electrical needs. *Graybar Electric Co., Inc. Executive Offices: Graybar Building, New York 17, N. Y.* 277-129

Call Graybar *first* for . . . Everything Electrical GraybaR

If you write maker identify as IEN - 10254



6 lb. bronze melt in 6 min.

6 lb. alloy steel melt in 12-15 min.

High efficiency 10 lb. capacity electric furnace

Research, experimental, and small production melts are speedily and efficiently handled by the Type NS, 10 KW, 10 lb. Detroit Electric Furnace. This compact, well designed indirect arc furnace produces ferrous and non-ferrous melts quickly, with excellent control of metal analysis and characteristics. A useful furnace which operates with simplicity and economy. Write for complete information.

DETROIT ELECTRIC FURNACE DIVISION
KUHLMAN ELECTRIC COMPANY
1050 26th St. • BAY CITY, MICHIGAN

Foreign Representatives in BRAZIL—Equipamentos Industriais, "Eisa" Ltd., Sao Paulo; CHILE, ARGENTINA, PERU and VENEZUELA: M. Castellini Inc., 150 Broadway, New York 7, N. Y.; MEXICO: Cia Proveedora de Industrias, Apartado 32-13, Apartado 2783, Mexico 6, D. F.; Mexico; EUROPE, ENGLAND: Birlec, Ltd., Birmingham.

If you write maker identify as IEN - 10255

NOVEL, *FAST* ELECTRONIC WEIGHING SPEEDS ALLOY STEEL MIXING

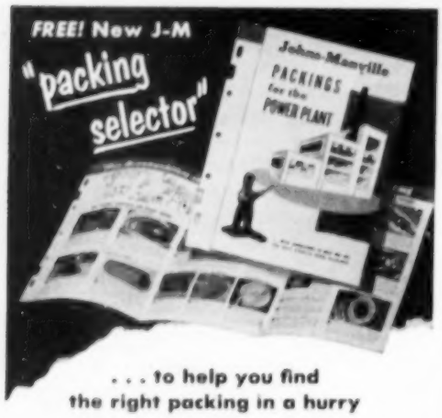
To produce small batches of alloy steels to exact chemical analysis, this steel maker built Baldwin SR-4 Load Cells into ladle supports. As needed, the weight of molten metal is quickly, accurately read on an indicator in a control pulpit . . . the exact amount of alloy to be added is determined, as is the number of ingots that can be poured.

Great economy has been realized . . . efficiency increased . . . alloy composition accurately predetermined.

Wherever there is a difficult problem in measuring torque, pressure, explosions, depth, weight, others, SR-4 measuring devices frequently offer an easy solution. Write for full information.

BALDWIN-LIMA-HAMILTON
TESTING HEADQUARTERS
Philadelphia 42, Pa.
In Canada: Peacock Bros., Ltd., Montreal, Quebec

If you write maker identify as IEN-10256



. . . to help you find the right packing in a hurry

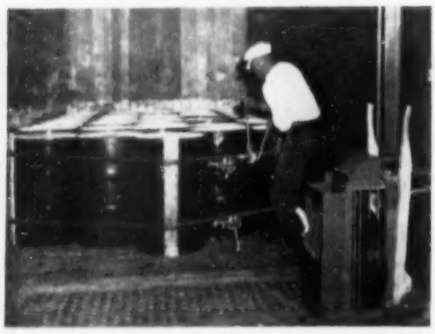
Why take chances with "any old packing" and run the risk of shutdowns and the expense of frequent replacements?

This handy new "packing selector" tells you at a glance the right Johns-Manville packing or gasket for practically any power plant application. Its recommendations are based on the experience of J-M engineers in solving packing problems and lowering packing costs in thousands of plants.

For your free copy, write Johns-Manville, Box 60, New York 16, N. Y. Ask for "Packings for the Power Plant."

JM Johns-Manville PACKINGS & GASKETS

If you write maker identify as IEN-10257



"Floating" a load for Standard Oil with STANLEY Car Banding

SAVES TIME • DAMAGE • DUNNAGE

At Panama City, Florida, Standard Oil of Kentucky loads its famous motor oils quickly, easily . . . and ships them safely, economically with Stanley Car Banding.

Here's how it saves —

Saves Time — Bracing cars with wood usually requires from 1 to 4 hours . . . Stanley Car Banding takes only a fraction of this time.

Saves Damage — Shipments banded into "floating units" are free to shift. When the car jolts, they ride with the punch . . . the slight movement absorbs the shock — prevents damage.

Saves Dunnage — Wood braced loads frequently use from 200 to 1500 lbs. of dunnage — on which freight charges must be paid. Car-banded loads use but a few lbs. of materials. In some cases dunnage weight is reduced 1400 lbs. per car.

Want lower shipping costs? Get in touch with a Stanley Representative. Branch Offices or Representatives in 32 principal cities. Send coupon.

STEEL STRAPPING AND CAR BANDING SYSTEMS

STANLEY

Reg. U.S. Pat. Off.

HARDWARE • TOOLS • ELECTRIC TOOLS • STEEL STRAPPING • STEEL

Invite the Stanley Man to Call

The Stanley Works, Steel Strapping Division
204 Lake St., New Britain, Conn.
Please ask your Representative to call and explain the advantages of the Stanley Car Banding System to me.

Name
Firm Name
Street
City and State

NEW LITERATURE — Continued

EXTRUDING . . "Stokes-Windsor" plastic extruding machines; specifications on models with 100 and 200 lb. per hr. capacity. Two bulletins, 4 pages each. F. J. Stokes Machine Co., 5956 Tabor Road, Philadelphia 20, Pa. **IEN-0977**

FASTENINGS . . Cold-headed rivets, shouldered rivets, pins, studs; illustrated production facilities, examples of standard and special units. Bulletin, 4 pages. Brainard Rivet Co., 229-24 Harry St., Girard, Ohio **IEN-0978**

FEEDING . . Rotary dry feeder for pneumatic conveyor or other equipment; specifications, capacity chart, applications. "Rotary Airlock", 4 pages. Prater Pulverizer Co., 1503 S. 55th Court, Chicago 50, Ill. **IEN-0979**

FORGINGS . . Drop, press and upset forgings; picture examples, facilities for production and for supplementary fabrication and assembly. Bulletin 5291, 8 pages. Pittsburgh Forgings Co., 652 Thorn St., Coraopolis, Pa. **IEN-0980**

FURNITURE . . Steel work benches, bench legs and drawers, machine cabinet stands, cabinet benches, stock carts; descriptions, dimensions. "Grizzly", 4 pages. Pucel Enterprises Inc., 3744-48 Kelley Ave., Cleveland 14, Ohio **IEN-0981**

GAGES . . Basic information on manometers and on how they operate; types, installation, operating procedure, servicing instructions, tables. Bulletin 313, 12 pages. King Engineering Corp., Box 510-A, Ann Arbor, Mich. **IEN-0982**

GAGES . . Manometers in standard, raised-well, U-tube designs; descriptions, ranges, list prices, mountings; indicating flow meters. "Red Line", 4 pages. Trimount Instrument Co., 3117-21 W. Lake St., Chicago 12, Ill. **IEN-0983**

GENERATORS . . Motor and engine driven, also converters, odd-frequency units; ratings on standard units, notes on specials. "Katolight", 4 pages. Kato Engineering Co., 1413-17 First Ave., Mankato, Minn. **IEN-0984**

GRINDING . . Airfoil grinding machine for turbine blades using an abrasive belt; description on the machine and the grinding cycle. Folder 551, 6 pages. Pratt & Whitney, 49 Charter Oak Blvd., West Hartford 1, Conn. **IEN-0985**

HEAT TREATING . . Furnaces in car, hearth, continuous types; illustrated examples with notes on design features. Bulletin, 12 pages. Loftus Engineering Corp., 610-A Smithfield St., Pittsburgh 22, Pa. **IEN-0986**

HEATING . . Storage oven for low-hydrogen welding electrodes; description on two sizes, notes on drying element for incoming air. "Stabilizer", 4 pages. Fred C. Archer Inc., 604-8 W. Wisconsin Ave., Milwaukee 3, Wis. **IEN-0987**

HEATING . . "Counterflo" forced-air space heaters in sizes to 2,000,000 btu. per hr.; construction points, application notes. Bulletin 523-B, 12 pages. Dravo Corp., Liberty & Fifth Aves., Pittsburgh 22, Pa. **IEN-0988**

HEATING . . Process heaters, coolers, heat exchangers, condensers for liquids and gases; picture review with explanatory captions. "Progress Issue", 8 pages. Griscom-Russell Co., 652 Griscom Ave., Dept. AA, Massillon, Ohio **IEN-0989**

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . *See Page 50*

If you write maker identify as IEN-10259

A Paid News Advertisement by Robinson Ventilating Co.

VENTILATING . . Centrifugal blower for exhaust service, 420 to 60,400 cfm.

Type-AE designates new single-inlet centrifugal exhaust blower fabricated from steel plate in welded assembly. The impeller is mounted on a cold-rolled steel shaft supported in self-aligning ball bearings. Drive can be arranged for direct or belt-connected motor on the box-type bearing base at the side of the blower housing.

Built in a wide range of sizes and can be made from heat resisting alloys for high temperature applications or acid resisting alloys for handling corrosive fumes.

Our engineering department will be glad to assist you in selecting the proper fan equipment.

Bulletin 5100, 20 pages, presents illustrated description and tabulated capacity and dimension data for each size in the line.

ROBINSON VENTILATING CO.
1948 Harmony St., Zelienople, Pa.

If you write maker identify as IEN-10260

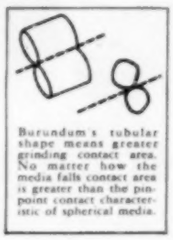
FOR FASTER, FINER GRINDS

BURUNDUM

Yes!! BURUNDUM gives you faster, finer grinds than conventional media, and here's why —

REASON ONE

BURUNDUM's unique, tubular shape.



REASON TWO

BURUNDUM's high specific gravity — 3.65. This high unit weight permits higher mill speeds — more contacts per minute — higher grinding consistencies.

REASON THREE

BURUNDUM's extreme hardness — 9.0 on the Moh's Scale. This high hardness assures positive attrition and minimum wear of the medium.

TO GET MORE OUT OF YOUR MILLS, PUT BURUNDUM IN!

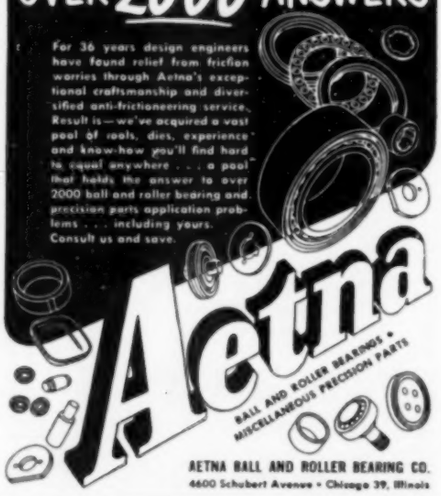
397-C

THE U. S. STONEWARE CO., AKRON 9, OHIO

If you write maker identify as IEN-10261

ASK US . . . WE HAVE OVER 2000 ANSWERS

For 36 years design engineers have found relief from friction worries through Aetna's exceptional craftsmanship and diversified anti-frictioneering service. Result is — we've acquired a vast pool of tools, dies, experience and know-how you'll find hard to equal anywhere . . . a pool that holds the answer to over 2000 ball and roller bearing and precision parts application problems . . . including yours. Consult us and save.



AETNA BALL AND ROLLER BEARING CO.
4600 Schubert Avenue • Chicago 39, Illinois

If you write maker identify as IEN-10262

Couch Phones Pay Dividends

If you are fed up with busy signals, excessive switchboard traffic, high phone bills, and time-wasting non-business calls . . . Couch Phones offer a solution. Expensive? No . . . not when you consider that you are now paying for them many times over through these same high phone bills and lost time due to busy signals and personal calls.

Couch Autophones combine privacy with the convenience of individual dial operation; and their original cost is the last cost. Investigate the advantages of Couch Inter-com Phone Systems. Write today for Bulletin 5282.

S. H. Couch Company, Inc.
NORTH QUINCY 71, MASSACHUSETTS

If you write maker identify as IEN - 10263

FREE!

HOW TO SAVE OLD ROOFS!

HOW

90% of Leaky Roofs can be Saved!
to cut Labor Costs in Half!
"Dead" Roofs get Extra Years of Life!

This simple system of roof maintenance and repair can save you today's high costs of re-roofing and major repair by outside contractors. Shows how every type of industrial and commercial roof can be maintained at low cost and give many years of extra service. This FREE manual, by word and picture, gives simple step by step methods of inspection and repair . . . tells what to look for and where to look to stop major roof defects *before they start* . . . how to do your own repairs quickly, effectively, economically. Packed with money-saving practical information. A request on your business letterhead brings your FREE copy at once—write today!

THE TROPICAL PAINT & OIL CO. SINCE 1883
1126-1280 W. 70th Street • Cleveland 2, Ohio

If you write maker identify as IEN - 10264

SPEEDS UP WORK! CUTS DOWN COSTS!

The amazing desk-top OZAMATIC makes direct copies of almost anything typed, printed, written or drawn!

No Retyping! No Proof-reading! No Costly Errors!

WITH the amazing new compact OZAMATIC, you simply feed in your original copy of any letter, drawing, or report on ordinary translucent material. In a matter of seconds you have your first copy—*clean, dry* and *ready to use!* Letter-size copies at a rate up to 1,000 an hour . . . at a cost of less than 1½c each.

You'll find many uses for the Ozalid direct copying process entirely self-contained in the desk-top OZAMATIC machine. It makes copies up to 16 inches wide, at speeds up to 50 feet per minute. Larger Ozalid machines accept wider originals, and have even greater capacity. Any girl in your office can learn to operate any Ozalid machine in five minutes.

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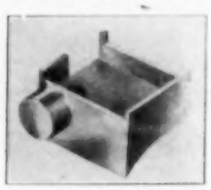
A Division of General Aniline & Film Corporation.
"From Research to Reality."
Ozalid in Canada—Hughes Owens, Ltd., Montreal.

If you write maker identify as IEN - 10266

CASTINGS . . Shell molded parts to specification, sand-plastic molds

Source: POWDERED METAL PRODUCTS CORP.
9333-37 Belmont St., Franklin Park, Ill.



To your order

The company announces installation of facilities to manufacture the required dies, to produce the sand-plastic molds employed in the new foundry process known as shell molding and to produce precision castings from these molds. The work is handled on a contract basis and involves the manufacture of precision dies that are required to make the molds ahead of producing the actual castings. The part shown in the illustration is typical of work that can be done.

If you write maker identify as IEN - 10267

PLASTIC . . Thermal setting material contains reinforcing fiber glass

Source: LIBBEY-OWENS-FORD GLASS CO.
2114 Sylvan Ave., Toledo 6, Ohio

Specifications in Bulletin A-13

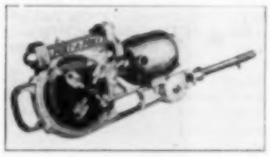
The company announces development of a new Type 440-A reinforced alkyd thermosetting molding material as further development of the similar material previously described IEN-91-52. Flame resistance and good arc resistance suit the new material to replace previously developed alkyds in applications such as molded insulators, electrical collector bodies, coil spools for magnetic starters, insulators for electrode holders, terminal blocks, electric brush holders.

The plastic is reinforced with glass fibers and can be molded at high production rates on standard equipment and dies. The molded part cures rapidly, does not require excessive pressure. The glass fibers remain in stationary suspension in the body of the material and do not separate during the molding operation so thin wall sections are not weaker in proportion than other heavier parts.

If you write maker identify as IEN - 10268

THREADING . . Portable drive head takes ¼ to 4 in. hand pipe stocks

Source: THREAD-EZY MFG. CO.
752 Thread Ave., Corunna, Mich.



Anyone can use it

Port-A-Pony is a new 26-lb. motor equipped driving head on which standard hand die stocks can be applied to thread pipe from ¼ to 4 inches. The head weighs 26 pounds. It requires clearance equivalent to a 12-in. working area. Connection between the ½-hp. universal 110-volt motor is by worm drive for the rotating movement. Control centers at a toggle switch beneath the motor.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10269

SPEED UP
SLOW-FLOW MATERIALS

TARS
PLASTICIZERS
WAXES
MOLASSES
GLUES
RESINS
GREASES
GUMS . . ETC.

ACRAWATT ELECTRIC
DRUM HEATERS
FIT ALL STANDARD 22¼" DRUMS

- Proven Acrawatt TWINSTRIP Construction.
- 3 Heats: 3000 Watts 230 Volts.
- Fast Heat Transfer.
- Aluminized Steel Encased.
- Enclosed Wiring Terminals.
- Low Radiant Loss.
- Fully Insulated.
- Easy to Install and Remove.

Kill time-consuming, costly slow-flow of viscous materials. Slip one or more Acrawatt Drum Heaters on your drums. Make sloggy, sluggish contents get a move on. Go on and off in a jiffy. Safe and simple to apply and operate. Use singly or in multiple. Save with Acrawatt reliability, long life ruggedness and efficiency. Order today.

ORDER NOW
EA. $19.50 F.O.B. CHICAGO
Spot Shipment
Shipping Wgt. 10 Lbs.

FOR BETTER ELECTRIC HEATERS AT BETTER PRICES, LET US QUOTE

ACRA INDUSTRIAL ELECTRIC CO.
9905 PACIFIC AVENUE FRANKLIN PARK, ILLINOIS

If you write maker identify as IEN - 10270

SOUTH BEND
LATHES • DRILL PRESSES • SHAPERS
for More Efficient Machining

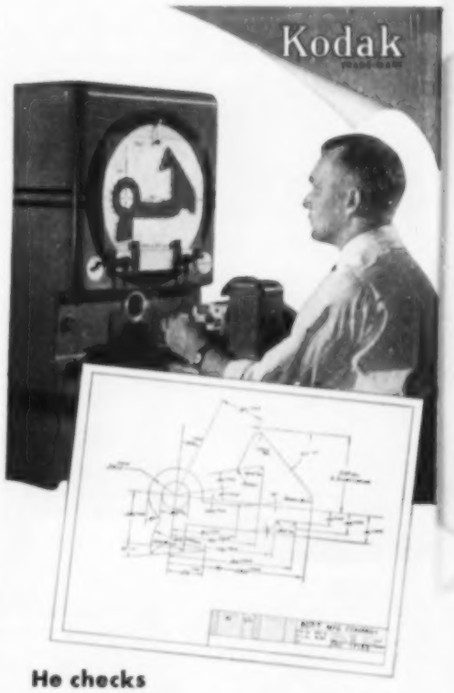
SEND FOR THIS NEW CATALOG

Complete in every detail, this new South Bend catalog is a valuable reference book which every shop man should have. Send for your copy today.

Engine Lathes — 9", 10", 13", 14½", 16" and 16-24" swing.
Bench Lathes — 9" and 10" swing.
Toolroom Lathes — 10", 13", 14½" and 16" swing.
Turret Lathes — 5½" and 1" collet — 9", 10", 16" swing.
Drill Presses — 14" Precision, Economy and Production models.
Shaper — 7" bench model with or without stand.
Accessories — for lathes, drill presses, shapers.

SOUTH BEND LATHE • South Bend 22, Indiana

If you write maker identify as IEN - 10271



He checks 15 Dimensions, 8 Radii, 7 Angles in ONE operation

To check this part completely and accurately by usual methods, you might need as many as two dozen or more different gages—and you still wouldn't be sure all corners were sharp, all angles and radii exact. There's a much faster, more accurate way to do the job completely, one that requires no mechanical gages that can lose accuracy through wear.

On the Kodak Contour Projector, Model 3, you just slip the part into a holding fixture and compare its magnified image with a "chart-gage" over the bright screen. *Every* detail shown on the drawing is quickly and directly compared against the part itself, to close tolerances and in *one* operation. Little training or experience is required to measure all sorts of complex parts, large or small.

To get an idea of the large labor savings that the Kodak Contour Projector can bring to your inspection problems, get in touch with Eastman Kodak Company, Industrial Optical Sales Division, Rochester 4, N. Y.

the KODAK CONTOUR PROJECTOR

Optical Gaging

A new sound movie shows how to simplify complex inspection problems. We'll tell you how to get it for a showing.

If you write maker identify as IEN - 10273

NOW! AN EASIER, FASTER WAY
To Apply Sealing Compounds

New ALEMITE
VERSATAL "TORNADO" PUMP

A PRODUCT OF SW

- Air operated! Dispenses material direct from original bulk drums.
- Assures positive and uniform delivery through long lines with complete safety.
- Lays hundreds of lineal feet per man-hour with far less product spoilage.

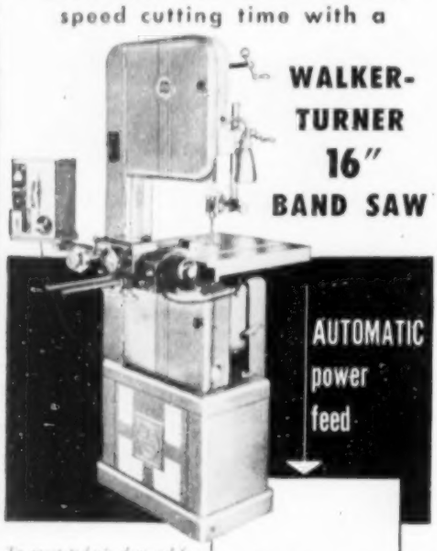
FREE! This book of ideas on how Alemite Versatal equipment can speed, simplify your material handling problems. Address your request to Alemite, Dept. K-52, 1850 Diversey Parkway, Chicago 14, Illinois.

ALEMITE Versatal
PAINT-TANK EQUIPMENT

If you write maker identify as IEN - 10274

Even unskilled operators can speed cutting time with a

WALKER-TURNER 16" BAND SAW



To meet today's demand for accurate and faster production, put the new Walker-Turner 16" Band Saw to work in your shop. Any operator, even unskilled labor, can quickly learn to handle these metal and woodworking machines. Built to simplify cutting operations, they're *fast, accurate, safe, easy to handle.*

The automatic Power Feed, a patented Walker-Turner feature, insures protection against overloading the blade—maintains a pre-set feeding pressure for sharper cutting—affords longer blade life.

Find out more about this practical way to increase output while reducing production costs.

Ask your distributor for full information about this and other Walker-Turner Power Tools for metal, plastic and woodworking operations. Or mail coupon today for complete catalog.

SOLD ONLY THROUGH AUTHORIZED DEALERS

WALKER-TURNER
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PLAINFIELD, N. J.

DRILL PRESSES • JOINTERS
TABLE SAWS • BAND SAWS
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JIG SAWS • RADIAL SAWS
LATHES • TILTING ARBOR SAWS

Walker-Turner Division, Kearney & Trecker Corp.
Dept. IE4, Plainfield, N. J.
Please send me the new Walker-Turner Machine Catalog.
Name
Title
Company
Address
City Zone State

NEW LITERATURE—*Continued*

HEATING . . Electric ovens for process use; details on standardized panel construction, design information, selection steps. "Pan-L-Heat", 16 pages. Jensen Specialties, Inc., 3235 Freeland Ave., Detroit 28, Mich. **IEN-0990**

INSULATING . . Mineral-wool thermal insulating block and finishing cement for temperatures to 1,700 deg. F.; properties. "Mono-Block and Powerhouse", 4 pages. Baldwin-Hill Co., 502 Breunig Ave., Trenton 2, N. J. **IEN-0991**

INSULATING . . Self-bonding electrical insulating tape; properties, recommended procedures for drop-wire and bridle-wire splicing. Bulletin, "Hi-Seal", 4 pages. Bishop Mfg. Corp., 80 Factory St., Cedar Grove, N. J. **IEN-0992**

INSULATING . . Steatite parts for electronic tubes; properties on three grades, examples of parts. "Lava Insulators for Electronic Tubes", 4 pages. M. Kirchberger & Co., 1425-27 37th St., Brooklyn 18, N. Y. **IEN-0993**

LOADING . . Crawler and wheel-mounted machines for coal, 5 ton per min.; construction points, notes on feed action. Bulletin H-75 Coal, 8 pages. George Hales Mfg. Co., Canal Place & 143rd St., New York 51, N. Y. **IEN-0994**

MARKING . . Engraving machine for nameplates, dials, scales, parts, tools; description, typical setups, accessories, examples of work. Bulletin, 6 pages. Green Instrument Co., 373 Putnam Ave., Cambridge 39, Mass. **IEN-0995**

MELTING . . "Markley" twin-crucible furnace in which combustion gases preheat a standby crucible; sectional drawing, dimensions. Bulletin C-101, 4 pages. Morrison Industries Inc., 17102 Miles Ave., Cleveland 28, Ohio **IEN-0996**

METERS . . Clamp-type ac. meter, 12 to 600 amp., 150 and 600 volts; operation, ranges, application suggestions. Leaflet, "Type AC-1", 2 pages. Columbia Electric Mfg. Co., 4517-21 Hamilton Ave., Cleveland 14, Ohio **IEN-0997**

MILLING . . Custom-built milling cutters and other cutting tools; illustrated examples, notes on "Boylock" tooth lock. Bulletin 392, 4 pages. American Cutter & Eng. Co., Bauer & Reuder Sts., Warren, Mich. **IEN-0998**

MILLING . . Quick-change tool holders, standard tools, adapters, arbors, boring bars; picture summary, construction points. Bulletin 5200, 8 pages. Beaver Tool & Eng. Corp., 2848-52 Rochester Rd., Royal Oak, Mich. **IEN-0999**

MOTORS . . Large pedestal-bearing induction motors; picture review, construction features, typical examples. Bulletin 05-R-7771, 4 pages. Allis-Chalmers Mfg. Co., 900 S. 70th St., Milwaukee 14, Wis. **IEN-01000**

PACKAGING . . "Scotch" pressure-sensitive tapes for carton sealing and reinforcing; application guide, dispensers. Folder PC-FDTM3, 6 pages. Minnesota Mining & Mfg. Co., 902 Fauquier St., St. Paul 6, Minn. **IEN-01001**

PACKAGING . . Crinkled kraft paper bags, retaining sheet for unit carbonding, spiral wrap, container liner; summaries. "Natro", 6 pages. National Waterproof Papers, Beckett & Front Sts., Camden 3, N. J. **IEN-01002**

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10276

HANKISON model B-30
Condensifilter

GIVES YOU CLEAN, DRY AIR FOR OPERATING INSTRUMENTS

The Condensifilter combines an efficient condensing unit for removing moisture . . . a mechanical filter for eliminating dirt . . . and a self-purging trap which automatically discharges the condensate. Only 15" high, the Model B-30 has a capacity of 30 cfm of free air at 100 psi.

WRITE FOR BULLETIN B-30A

HANKISON Corporation
982 Banksville Road
Pittsburgh 16, Pa.

If you write maker identify as IEN - 10277

5 REASONS WHY
Pannier "MASTER MARKER"
SUPREME STAMPING HOLDERS
are preferred

Supreme Holder stamps multiple characters in hot or cold metal with one easy operation. Write for details of styles and sizes available.

OFFICES: Chicago Los Angeles Youngstown Philadelphia Jacksonville

THE PANNIER CORPORATION
101 Pannier Building
Pittsburgh 12, Pa.

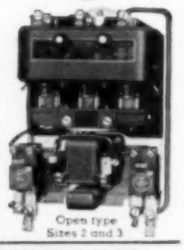
If you write maker identify as IEN - 10278

CLARK type "CY"

AC MAGNETIC MOTOR STARTERS
now available in
DUST-TIGHT ENCLOSURES

The sensational new CLARK Type "CY" motor starters are offered in a wide variety of types and enclosures for use in such industrial atmospheres as hazardous gas, dust or excessive humidity. Illustrated is the NEMA Type V Dust-Tight, Fabricated Steel Enclosure—with gasket and wing nuts. This is available for sizes 0, 1 and 2.

CLARK Type "CY" starters, sizes 2 and 3, have an entirely new arc-quenching principle which greatly increases contact life, by a constant rotation of the arc on contact surfaces.



Open type Sizes 2 and 3

Write for descriptive literature.

THE CLARK CONTROLLER CO.
ENGINEERED ELECTRICAL CONTROL • 1246 EAST 152ND STREET, CLEVELAND 10, OHIO

If you write maker identify as IEN - 10279

"Most of your machinery shutdowns, due to bearing failures, could be avoided with Trabon Lubricating Systems."

Trabon has the only completely enclosed measuring valve that notifies the operator if trouble develops.

Trabon oil and grease systems lubricate as your machines produce . . . guarantee more production, less repair costs, efficient operation, and longer bearing life.

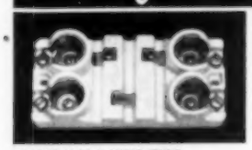
Trabon Lubricating Systems pay for themselves in a short time and bring a handsome profit to owners.

Trabon
OIL AND GREASE SYSTEMS

TRABON ENGINEERING CORP.
1814 East 40th Street
Cleveland 3, Ohio

If you write maker identify as IEN - 10280

low cost maintenance for high cost circuits



SHAWMUT DIAMOND S CUT-OUTS

CARTRIDGE & PLUG TYPE.

Supplied as standard above 30 amps with Shawmut SHUR-GRIP pressure connectors and spring action fuse clips. Available in Porcelain, Black Molded Composition and Slate. Single Double and Triple Pole types. Also, 3-wire with 2 branches; Fused and Unfused Neutral; Special Live Front type. Ask for Bulletin 2507.

Shawmut FUSE TERMINALS
National Electrical Code Standard
Ask for Bulletin No. 508.

Shawmut CLIP LOCK CLAMPS
No tools are required
Ask for Bulletin No. 511.

Shawmut FUSE CLIPS
National Electrical Code Standard
See Bulletin No. 506.

Shawmut FUSE PULLERS
Two sizes—Pocket and Giant
See Bulletin No. 511.

Shawmut WIRE LUGS
N. E. Code Standard to 600 Amperes inclusive.
Send for Bulletin No. 508.

Shawmut TESTED FUSE WIRE, RIBBON & LINKS
Standard for the industry.
Ask for Bulletin No. 509.

Famous for quality since 1893. Chase-Shawmut products set standards for the industry. Count on them for positive protection whenever maintenance is required.

THE **CHASE-SHAWMUT** CO.
386 MERRIMAC STREET • NEWBURYPORT, MASS.

If you write maker identify as IEN - 10281

it's Your "Q"

Quality . . . that costs no more is yours when you choose Fairbanks-Morse Side Suction Centrifugal Pumps. Extensive engineering laboratories . . . production line methods with precision machining of all parts enable Fairbanks-Morse to offer you a side suction centrifugal with the design, workmanship and performance normally obtained only in highest quality split-case pumps.

Open type, single suction, high efficiency impeller . . . ball-bearing frame construction for long life and smooth operation . . . one-piece, solid cast frame . . . close-grained smooth cast iron volute . . . are among the many big pump features you'll find in these moderate priced side suction centrifugals.

For a "cue" to better pump performance, choose the pumps that spell quality with a capital "Q" . . . Fairbanks-Morse Side Suction Centrifugals. Fairbanks, Morse & Co., 600 S. Michigan, Chicago 5, Ill.

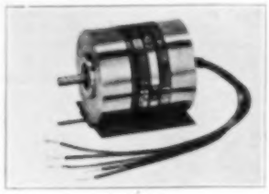
FAIRBANKS-MORSE
a name worth remembering when you want the best

PUMPS • DIESEL LOCOMOTIVES • ELECTRICAL MACHINERY • SCALES • HOME WATER SERVICE EQUIPMENT • RAIL CARS • FARM MACHINERY • MAGNETOS

If you write maker identify as IEN - 10283

MOTOR . . Two phase Servo design, 60 or 400 cycles, 2, 4 or 8 poles

Source: G-M LABORATORIES INC.
4312 N. Knox Ave., Dept. J, Chicago 41, Ill.



Features accuracy

Small torque is approximately 2 in. oz. and in some instances can exceed that amount in the company's new line of precision motors for Servo and control use. The housing is made of stainless steel or aluminum. The output shaft can be supplied as specified, either plain or with an integral pinion. Output speed also can be provided as desired by application of a gear train.

The housing in the unit shown measures 1.7 in. in diameter by 1.75 in. in length. A gear train adds ½ inch. The housing can be modified for flange or ring mounting and is made of aluminum or stainless steel as required. The motor is available to meet military specifications for humidity, temperature, range, vibration and altitude.

If you write maker identify as IEN - 10284

METER . . Measures voltage of electrodes on a dielectric heater

Source: WESTINGHOUSE ELECTRIC CORP.
511 Wood St., Dept. IEN, Rm. 1110, Pittsburgh 30, Pa.

For correct heat setting

New voltmeter consists of a capacity voltage divider and a crystal rectifier unit connecting to an indicating instrument calibrated in kilovolts. Operation is taken from the radio frequency voltage source on a dielectric heater. The reading tells the operator the amount of energy being applied to the heater electrodes.

Two scale ranges measure rms. values to 5,000 and to 10,000 volts Frequency ratings are 200 to 3,000 kc. and 3 to 50 mc.

If you write maker identify as IEN - 10285

CUTTING . . Circular blade machine, hand drive, to cut out steel drum head

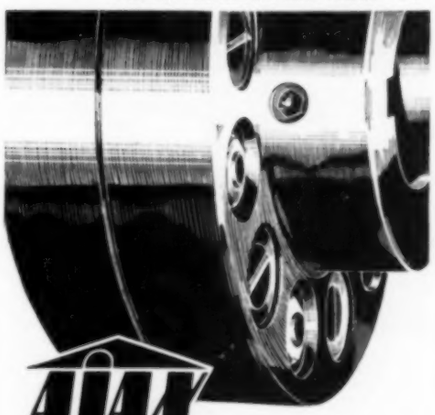
Source: MICHAEL A. SCHINKER MFG. CO.
6512-16 S. Western Ave., Chicago 36, Ill.

List is $75

Model 600 is a new ratchet operated assembly in the company's line of drum head cutting equipment. It has been designed particularly for use on non-returnable steel drums and cans made of 24 to 30-gage metal. The completed cut leaves a safe turned in flange. The cutting action does not agitate the contents of the drum. Weight is 12 pounds.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10286



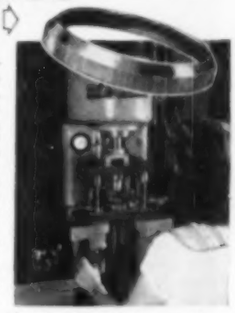
AJAX RUBBER BUSHED
FLEXIBLE COUPLINGS
standard of industry for 30 years

● Protect expensive direct-driven machines against damage from unavoidable misalignment. Cut machine design, installation and maintenance costs. Write for bulletin.

AJAX FLEXIBLE COUPLING CO. INC., WESTFIELD, NEW YORK
Incorporated 1920

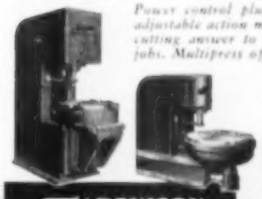
If you write maker identify as IEN - 10287

MULTIPRESS® broaches a delicate part



For a *tough* broaching operation on a precision part, Fee and Stenwedel, of Chicago, found the answer in Multipress. With each ram stroke, a 6-ton Multipress puts 120 close-tolerance serrations around the rim of a thin-walled compass bezel made of half-hard brass. Notches are .018" deep, with an allowed tolerance of only .005". Broaching 800 units per hour, *scrap losses of less than two per hour are due entirely to incorrect placing of parts!*

Multipress does the work with automatic accuracy — operators with no special training get perfect results.



Power control plus smooth, rapid, widely adjustable action make Multipress the cost-cutting answer to hundreds of production jobs. Multipress offers 8 frame sizes; 1-ton to 50-ton capacities . . . manual and automatic controls . . . tooling for any standard or special ram action. Index Table Feeds, Automatic Stock Feed and other Multipress accessories available. Write:

DENISON HyperOil ies

The DENISON Engineering Co.
1150 Dublin Road, Columbus 16, Ohio

If you write maker identify as IEN - 10288

CLANCY SURE-GRIP HOSE CLAMPS

● CAN BE REUSED
● HEAVY STEEL
● PERFECT CIRCLE

Clancy clamps grip evenly, hold any pressure the hose stands. Each part separately galvanized . . . no raw edges, won't rust. Sure-Grips keep their shape, can be removed and reused. For air, gas, water or steam. Every size to fit foreign or domestic hose. Write for prices.

J. R. CLANCY INC.
1000 W. Belden Ave.
SYRACUSE 4, N. Y.

If you write maker identify as IEN - 10289

It's NEW!

It's FAST! TOLEDO SPEEDWEIGH® OVER-UNDER SCALES

Here's *new speed with accuracy* for you in check weighing, packaging, many other operations today . . . 5 sizes—to 5 lb., to 20 lb., to 50 lb.! Shadowfree wide-angle reading . . . accurate to 1/64 of an ounce . . . new improved knife-edge check link system . . . *exclusive* "coined" bearings for greater accuracy, longer life . . . stainless steel beam . . . enclosed levers in one-piece housing . . . choice of platters and scoops . . . many more *plus* features! Write for bulletin 1416. Toledo Scale Company, Toledo 1, Ohio.

TOLEDO® *Headquarters for* **SCALES**

If you write maker identify as IEN - 10290

Get the facts on TUFF-TEX*

This modern, economical grease-proof floor tile is manufactured especially for industrial plant use. It's the answer to *many* factory floor problems because it *stands up* beautifully to nearly every kind of wear and tear a factory floor must face!

A really *heavy-duty* floor tile . . . Tuff-Tex withstands material handling truck traffic with ease.

And it is especially recommended for machining areas where grease and oil abuse is heavy.

Send today for your free copy of "TUFF-TEX Greaseproof Industrial Flooring" . . . a folder that shows all the Tuff-Tex colors . . . gives full information and specifications.

THE TILE-TEX DIVISION, *The Flintkote Company, 1254 McKinley Street, Chicago Heights, Illinois.*

The Flintkote Company of Canada, Ltd., 30th Street, Long Branch, Toronto, Canada.

*Registered Trademark. The Flintkote Company

TUFF-TEX *Greaseproof Industrial Tile*

If you write maker identify as IEN - 10291

Rolls REELY roll on

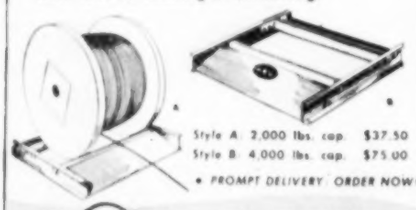
ROLL-A-REEL

Go modern . . . save time . . . save labor . . . save cost.

ROLL-A-REEL

enables you to reel or unreel wire, cable, rope . . . easily, quickly . . . economically.

Adjustable slots for wide variety of reel sizes. Strong . . . with low slanted front and positive front lock for loading or unloading.



Style A 2,000 lbs. cap. $37.50
Style B 4,000 lbs. cap. $75.00

• PROMPT DELIVERY · ORDER NOW!

ROLL-A-REEL

327 West Fourth St. Cincinnati 2, Ohio

If you write maker identify as IEN - 10292

Need

Trim • Assemblies
Rolled Forms
Stampings

It costs no more to Sub-contract with a **SPECIALIST**

You'll find it profitable to get your stampings or rolled forms from Greene. Sub-contracting is our business. We've built it by meeting quality standards and delivery dates.

Let us sub-contract your defense or civilian work. Send coupon today. No obligation on quotations.

TEAR OUT AND MAIL
☐ HAVE REPRESENTATIVE CALL
☐ SEND ILLUSTRATED BULLETIN

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G-11a

Greene of Racine

GREENE Manufacturing Company, Inc., Racine, Wis.

NEW LITERATURE—Continued

PAINTING . . Spray booth coating that peels off to remove accumulated paint; properties, application method, approximate coverage. Leaflet, "Vincote", 2 pages. Detrex Corp., 14329 Woodrow Wilson, Detroit 32, Mich. **IEN-01003**

PAINTING . . Masking materials and a dispensing stand to prepare equipment for spray painting; descriptions, suggested procedure. Booklet 26-7, 16 pages. Industrial Tape Corp., Highway #1, New Brunswick, N. J. **IEN-01004**

PLASTICS . . Stock molded parts; condensed data on 36 types such as knobs, handles, nuts, caps, terminal strips, handwheels. "Stock Molded Plastic Parts", 4 pages. Dimco-Gray Co., 208 E. 6th St., Dayton 2, Ohio **IEN-01005**

PRESSES . . Type S-2 straight-side double-crank units, 50 to 2,000 ton; specification table, examples, design points on press and clutches. Catalog 17-D, 20 pages. E. W. Bliss Co., 1373-77 Raff Road S. W., Canton 10, Ohio **IEN-01006**

PROTECTING . . Skin-toughening salt solution to prevent athlete's foot; description, list prices on the material and dispensing sponge mats. Bulletin, 4 pages. Onox Inc., 119-23 Second St., San Francisco 5, Calif. **IEN-01007**

PUMPS . . Adjustable-stroke reciprocating unit for pressures to 15,000 lb.; adjustment method, operation, application diagram, size table. Bulletin 65-A, 8 pages. Aldrich Pump Co., 20 Gordon St., Allentown, Pa. **IEN-01008**

PUMPS . . Triplex hydraulic pump, 5,000 to 20,000 lb. maximum, integral electric drive; three-page captioned cut-away view, sizes, ratings. "Triplex Pump", 6 pages. Kobe Inc., 3638 E. Slauson Ave., Huntington Park, Calif. **IEN-01009**

RECORD KEEPING . . "Index Visible" equipment for reference indexes and records that change often; models, cards, operation. Bulletin KD-698, 12 pages. Remington Rand Inc., 315 Fourth Ave., Rm. 1618, New York 10, N. Y. **IEN-01010**

RECORDING . . Instruments to amplify and record from pickup or transducer input, using heat sensitive paper; summary. Booklet, "Seven Advantages", 16 pages. Sanborn Co., 37-41 Osborn St., Cambridge 39, Mass. **IEN-01011**

REFRIGERATING . . No. 370 purger to remove air and other non-condensible gases from refrigerating equipment; operating sequence. Folder 221, 4 pages. Armstrong Machine Works, 888 Maple St., Three Rivers, Mich. **IEN-01012**

RESISTORS . . "Super Davohm" precision wire-wound resistors; data on miniature and commercial types, also hermetically sealed units. Catalog Section R, 6 pages. Daven Co., 189-93 Central Ave., Dept. RB, Newark 4, N. J. **IEN-01013**

SEALING . . "Handy-Pack" packings for stuffing-box service to 450 and 900 deg. F.; types, installation suggestions, list prices, uses. Bulletin 443, 4 pages. Durametallic Corp., 2106 Factory St., Kalamazoo 24F, Mich. **IEN-01014**

SEALING . . "Lattice-Braid" rod packing, ¼ to 1 in.; advantages of the braiding method, service recommendations, lengths and weights. Bulletin AD-131, 8 pages. Garlock Packing Co., 248-52 Main St., Palmyra, N. Y. **IEN-01015**

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 89

If you write maker identify as IEN - 10293

BAKER 4-PURPOSE CARRIAGE
Makes a Fork Truck do more work

Hydraulically operated attachment for Baker Fork Trucks, providing:

1 STANDARD FORKS
2 CLAMP
3 FORK SPACER
4 SIDE SHIFTER

● With this special lift carriage assembly, in place of a regular fork lift carriage, any standard Baker 2000 to 4000-lb. Fork Truck becomes a multi-purpose handling machine. From one adjustment it functions as a *standard fork truck* for pallet and ordinary fork truck handling, as a *clamp truck* for handling drums, cartons, skid boxes, etc., and as a *fork-spacer*, permitting the handling of varying widths of pallets, skids or other loads. A simple change in the adjustment converts it into a *side-shifting fork truck* which speeds many carloading and storing operations by making it easier to line up loads in close quarters. Lateral movement of forks in each case is operator-controlled by a lever conveniently located on the dash. Action is hydraulic, with roller conveyor chain linkage.

For complete information ask for BULLETIN 1350-1

THE BAKER-RAULANG CO.
1226 WEST 80th STREET, CLEVELAND 2, OHIO

Baker INDUSTRIAL TRUCKS

If you write maker identify as IEN - 10294

AIR CYLINDER

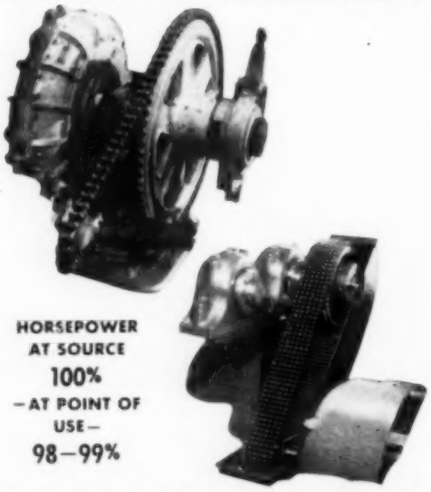
BELLOWS AIR MOTOR COMES COMPLETE WITH ALL OPERATING CONTROLS BUILT-IN. NO EXTRA VALVES TO BUY. REQUIRES ONLY A SINGLE AIR CONNECTION. FIVE BORE SIZES: 1¼", 1¾", 2½", 3⅝", 4½". ANY STROKE LENGTH. MANY MOUNTING STYLES.

WRITE FOR BULLETIN CL-30 • ADDRESS: DEPT. IEN-952

The Bellows Co.
AKRON 9, OHIO
1499

If you write maker identify as IEN - 10295

STOP POWER LOSSES



HORSEPOWER AT SOURCE
100%
—AT POINT OF USE—
98—99%

WITH COMPACT, POSITIVE DIAMOND ROLLER CHAINS

● Diamond Roller Chains provide the perfect path for horsepower. They roll at every point of contact, deliver power at point of use with so little loss in transmission that it can scarcely be measured.

Power cost is therefore one cost you can cut — and because Diamond Roller Chains deliver without slip, — maximum speed for top machinery output is maintained.

Much helpful up-to-date information is included in Catalog 709. A copy will be mailed you on request.

DIAMOND CHAIN COMPANY, Inc.
Dept. 465, 402 Kentucky Avenue, Indianapolis 7, Indiana
Offices and Distributors in All Principal Cities
Refer to the classified section of your local telephone directory under the heading CHAINS or CHAINS-ROLLER

DIAMOND ROLLER CHAINS

If you write maker identify as IEN - 10297

MARKEM

marks them all

FROM ARTILLERY SHELLS TO MEDICAL AMPULES

MASTERS OF MARKING — Since 1911

Markem methods, machines, type and inks have been marking the products of industry for forty years. Markem machines can mark up to many thousands of pieces per hour. They make clear, durable imprints on flat, curved or irregular surfaces of paint, paper, wood, glass, metal, leather, plastic, rubber, fabric, composition and pressure sensitive tapes. No special skill is needed for their operation. Legend and color of imprint may be quickly and easily changed.

MAKE YOUR MARK WITH MARKEM

When your products need marking for Identification, Control or Market — ask Markem. Submit your problem, together with a sample of the item to be marked. Markem Machine Company, Keene 2, New Hampshire.

MARKEM — BETTER MARKING SINCE 1911

If you write maker identify as IEN - 10298

Well Stacked!

Let our rack specialists lay out your new installation for maximum efficiency or study your present operation for possible improvements.

PROPER STACKING OF GOODS SAVES SPACE AND LABOR

E.M.I. engineers, fabricates and installs complete rack systems. Our designs offer the greatest in strength and safety, incorporating our square welded steel tubing and simplified assembly methods.

- PALLET RACKS
- PORTABLE STOCK RACKS
- COIL RACKS
- SPECIAL RACKS FOR ALL APPLICATIONS

Write for our catalog

EQUIPMENT MFG. INC.

21564 Hoover Road, Detroit 5, Michigan

If you write maker identify as IEN - 10300

ROCK DRILLING . . Pneumatic drill applies on company's Pneumatractor

Source: SCHRAMM INC.
800 E. Virginia Ave., West Chester, Pa.

The driver drills

Pneumafeed Deluxe is a new self-propelled self-powered wagon drill to produce holes at any angle in a 180-deg. arc and at any distance to 6 ft. from the rear of the Pneumatractor on which the new equipment is mounted. Holes can be drilled horizontally to a distance 10 ft. above ground level or 3 ft. below ground level. When in transit, the equipment fits in front of the rear wheel close to the tractor body. The rock drill can be replaced with a paving breaker for utility operations.

If you write maker identify as IEN - 10301

CONVEYING . . Rubber fabric belt handles packages on 30 deg. incline

Source: BALDWIN BELTING INC.
76 Murray St., New York 7, N. Y.

For service to 200 deg. F.

Natural rubber is employed for the non-skid cover and for the adhesive coating between the plies of 16-oz. woven duck that form the body of this new Tread-Top belt. It is available in widths to 48 in. and in any required length. It can be laced or made endless with a multiple-step lap joint. The tire-tread cover measures about ⅛ in. in thickness. The belt is calendered and press cured to an overall thickness a bit under ¼ inch. The structure is sufficiently flexible to permit operation over 2-in. diameter pulleys. Tensile strength is to 1000 pounds. Load is maximum at 90 lb. per inch of width.

If you write maker identify as IEN - 10302

CONNECTOR . . Outlet receptacle with pendulum lock and circuit switch

Source: TIGERMAN ENGINEERING CO.
4330-34 N. Western Ave., Chicago 18, Ill.

Interlocks safely

Two receptacles are located in the front face of this new unit and a pendulum type lock is pivoted to come down over them and hold connector plugs in position so they cannot be pulled out until the pendulum is moved to one side or the other.

Inside the housing a mercury switch operates with the pendulum to open the supply circuit when the pendulum is to either side so current will not be on either receptacle. Rating is 20 amp. on 110-volt ac. in standard arrangement.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10303

EMERGENCY HEAT ON WHEELS FOR INDUSTRY!

• You can avoid layoffs, speed work in cold areas, provide temporary heat for warehouses with Herman Nelson Portable Heaters. They also provide auxiliary heating for those extra cold days or during loading or unloading operations and for scores of other heating and drying jobs.

HERMAN NELSON DELUXE I

Capacity 280,000-450,000 BTU/hr. Completely automatic, including temperature control. Fresh air delivery 2,000-2,350 cfm. Oil fired, electric powered. Other models available—with gasoline or electric power—and capacities from 125,000 to 385,000 BTU/hr.

The only completely safe portable heater that uses flexible ducts to spot heat where most needed—and remember, only uncontaminated air heaters are absolutely safe!

Models as low as $360.00—total cost often saved during first season. For full information, write Dept 101, Herman Nelson Division, American Air Filter Company, Inc., Moline, Illinois.

If you write maker identify as IEN - 10304

THE RIGHT TOOL WHEN YOU WANT IT

This Continental Counterbore Set No. 1 contains a wide assortment of counterbores, countersinks and pilots arranged for quick selection. Its two holders feature Continental's Balanced Indestructible Drive, in which the tools are engaged or disengaged by a simple "twist of the wrist." One of Continental's three standard counterbore sets is sure to suit your needs. Order through your local Ex-Cell-O representative or write to Continental for complete information. Ask for Bulletin B47-37.

52-10

CTW

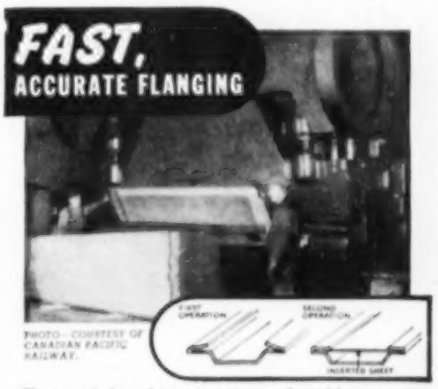
Continental Standard Counterbore Set No. 1 for counterboring, spot-facing and countersinking.

CONTINENTAL TOOL WORKS

DIVISION OF EX-CELL-O CORPORATION • DETROIT 32, MICH.

If you write maker identify as IEN - 10305

FAST, ACCURATE FLANGING



PHOTO—COURTESY OF CANADIAN PACIFIC RAILWAY.

Flue panels for refrigerator cars are shaped in two operations at a high production rate to close tolerances with a 375 ton Steelweld Press in a large railroad car plant. You, too will find the many features of Steelwelds of great advantage. All size machines for plate to 1½ inch and for lengths to 20 ft.

STEELWELD BENDING PRESSES CATALOG No. 2010

Send for free copy of catalog No. 2010.

THE CLEVELAND CRANE & ENGINEERING CO.
4246 East 281st St., Wickliffe, O.

STEELWELD PRESSES

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Your steel requirements get prompt personal attention at Ryerson. Some kinds and sizes in short supply; so use Gov't. ratings when they apply. We'll do our best to help.

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SAVE TIME CUT COSTS REDUCE INTERFERENCE

***with the G-E* HEAVY-DUTY CLEANER**

G-E Heavy-Duty cleaners are invaluable in industrial cleaning operations. Even inexperienced help can take over with little training—because G-E Industrial cleaners are as easy to operate as home-type vacuums.

These G-E cleaners are compact and portable, weigh only 51 pounds. Their flexibility of use means minimum interference on the job.

Yet these cleaners have full one horse-power vacuum units for fast, thorough pick-up of all litter. Extra wide nozzles scour flat surfaces in a hurry. Other attachments make the inaccessible places easy to reach. It takes only a jiffy to convert to a blower when needed.

The G-E Heavy-Duty cleaner handles wet cleaning just as effectively—needs only the change from filter bag to wet pick-up container to gather up suds, overflow, and other wet mess.

Heavy-Duty Cleaning Equipment

GENERAL ELECTRIC

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1285 Boston Ave., Bridgeport 2, Conn.
Without obligation, please send complete details on heavy-duty cleaning equipment.

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NEW LITERATURE—*Continued*

SEALING . . Temperature-resistant O-rings of "Parkone" compounds; specifications, size tables from .112 to 9.914 in. i. d. Catalog 5190-A-1, 4 pages. Parker Appliance Co., 17323-27 Euclid Ave., Cleveland 12, Ohio. **IEN-01016**

SIGNALING . . Photoelectric indicator and alarm to signal presence of smoke in air-conditioning ducts; data on three models. Bulletin 521, 4 pages. Fox Instrument Co., 94-98 S. Washington Ave., Bergenfield, N. J. **IEN-01017**

SPRAYING . . Nozzles for industrial process use from air washing to spray drying; types, spray patterns, sizes and capacities, applications. Bulletin 5200, 40 pages. Binks Mfg. Co., 3122 Carroll Ave., Chicago 12, Ill. **IEN-01018**

STEELS . . Tungsten-cobalt water-hardening tool steel; properties, physical test data, forging and heat-treating information. "Albead", 4 pages, Allegheny Ludlum Steel Corp., 2096-A Oliver Bldg., Pittsburgh 22, Pa. **IEN-01019**

STEELS . . Properties, heat treatment, applications on types for cold-heading dies, trim dies. "Tool Steels for the Fastener Industry", 8 pages. Universal-Cyclops Steel Corp., 552 Universal, Dept. 37, Titusville, Pa. **IEN-01020**

STRAIGHTENING . . Machines for rod stock prior to entry into a press; specifications and operating notes on six models. Bulletin 308, 4 pages. F. J. Littell Machine Co., 1133 N. Ravenswood Ave., Chicago 13, Ill. **IEN-01021**

SWITCHES . . Pushbutton and selector units for machine use, also pilot lights; data on individual units and on assemblies. "Oil Tight Pushbuttons", 12 pages. Arrow-Hart & Hegeman, 103-5 Hawthorn, Hartford 6, Conn. **IEN-01022**

TACHOMETERS . . One to five-range mechanical hand tachometers, also a chronometric unit; descriptions, range figures. Bulletin 12-AA, 2 pages. Associated Research Inc., 3762 W. Belmont Ave., Chicago 18, Ill. **IEN-01023**

TESTING . . Leak detector for vacuum or pressure equipment; description, application suggestions. "Consolidated No. 24-101A", 16 pages. Distillation Products Industries, 761 Ridge Road, Rochester 3, N. Y. **IEN-01024**

TESTING . . Type 1692-A meter to measure impedance at 50 to 1,500 mc; description, typical measurements made, other uses. Bulletin 777-B, 4 pages. General Radio Co., 275-77 Massachusetts Ave., Cambridge 39, Mass. **IEN-01025**

TRUCKS . . Operator-walk electric lift truck, 2,000 and 2,500 lb. capacity, lifts 131 in.; condensed data, diagrams. Bulletin ST-505 rev., 2 pages. Automatic Transportation Co., 149 W. 87th St., Chicago 20, Ill. **IEN-01026**

TRUCKS . . Hand hydraulic lift truck, 2,500 to 6,000 lb.; specification table on 24 models, instructions on removal of hydraulic unit. Bulletin 525, 8 pages. Barrett-Cravens Co., 4000 S. Western Blvd., Chicago 9, Ill. **IEN-01027**

TRUCKS . . Model-J "Spacemaster" electric fork truck in ½ to 1-ton models; construction points, attachments. Catalog 33, 12 pages. Lewis Shepard Products Inc., 193 Walnut St., Dept. R-1, Watertown 72, Mass. **IEN-01028**

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10310

BOSTITCH P4 STAPLING PLIER

WORKS WHERE OTHERS WON'T

Thin clinching blade . . . slips easily into tight places

In assembly operations . . . in sealing bags, cartons, corrugated wrappings . . . . in making up containers . . . the Bostitch P4 Stapling Plier is a fast-fastening favorite. Loads quickly and easily . . . clinches staples securely with little effort . . . stands up under long, continuous use. Three models; for light, medium and heavy wires, with leg lengths from 5/32" to 9/16."

Write for Bulletin 222. Bostitch, 649 Mechanic Street, Westerly, R. I.

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AND FASTER

fastens it better with wire

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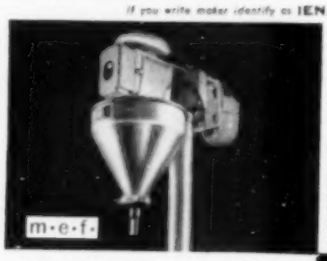

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DELIVERS MEASURED QUANTITIES OF **WET** OR **DRY** MATERIALS TO PROCESSES OR CONTAINERS

sets new standards of low cost production

A new high in filling speed—up to 120 fills per minute; maximum accuracy—savings in material often offset initial cost within a year; extreme flexibility—of capacity, control, materials and packages handled; quick change-overs—it takes only 5 minutes to clean, sterilize and change m·e·f· for wet or dry materials; ease of maintaining cleanliness and sanitation.

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FAST • ACCURATE • FLEXIBLE • CLEAN

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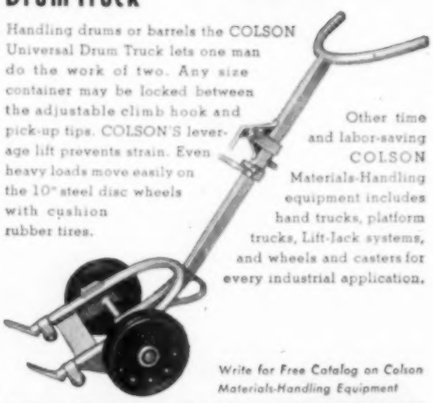
The Colson Universal Drum Truck

Makes LIGHT of Heavy LOADS

Handling drums or barrels the COLSON Universal Drum Truck lets one man do the work of two. Any size container may be locked between the adjustable climb hook and pick-up tips. COLSON'S leverage lift prevents strain. Even heavy loads move easily on the 10" steel disc wheels with cushion rubber tires.



Other time and labor-saving COLSON Materials-Handling equipment includes hand trucks, platform trucks, Lift-Jack systems, and wheels and casters for every industrial application.

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CASTERS • LIFT-JACKS • INDUSTRIAL TRUCKS

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5 MINUTE SHOP COAT at ⅓¢ per sq. ft.

Link-Belt Co., Philadelphia, protects its product with ROSKOTE Black Shop Coat.

ROSKOTE SHOP COAT

dries to a non-tacky film in less than five minutes. It resists corrosion from acids, alkalies and moisture during shipment and storage for 9 to 18 months, depending upon atmospheric conditions. The dried film presents a clean, glossy appearance and will not pick up dust from surrounding contacts. ROSKOTE Shop Coat contains a resin base derived from Roskote, a pyrobituminous organosol. It is supplied in non-pigmented black, or in red, olive drab and aluminum. ROSKOTE may be applied by brush, spray or dip-tank.

ROSKOTE covers 600 to 900 square feet per gallon, with the additional important economy of quick handling and removal of the coated part, thus saving valuable time and floor space. ROSKOTE Shop Coat has been approved by the American Iron and Steel Institute, under its JEx Thin Coat Series for Export Shipment. Write for complete information, specifications and prices.

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For any or *all* engine parts—parts that can "take it," *leading auto manufacturers have long relied on Lycoming precision production.*

The superb performance of today's auto engines demands the *finest* in precision-machined parts. To meet such exacting standards, leading makers in the auto industry—like those in many other industries—depend on Lycoming skill and resourcefulness.

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Lycoming Spencer Division, Williamsport, Pa. Bridgeport Lycoming Division, Stratford, Conn. AVCO

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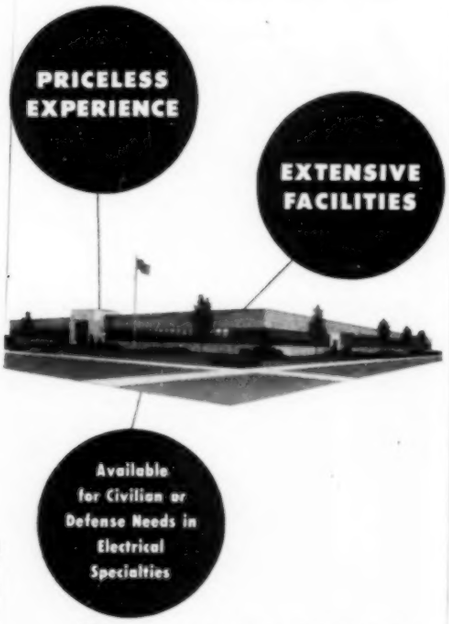

Whatever you need in electrical specialties, it will pay *you* to take advantage of Soreng's priceless experience and extensive facilities.

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Plants: Schiller Park, Ill. • Fremont, Ohio

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GRINDING . . Wheel dresser for radii to 2 in., concave to convex

Source: PERFEX GAGE & TOOL CO.
121-25 Avery St., Dept. P, Mount Clemens, Mich.

Sets for complex outline

Tangi-Matic trade names new design of the company's precision adjustable wheel dresser, previously described IEN 6/88-48. The new unit will dress any combination of radius and tangent angle form. Built-in adjustment eliminates the need for gage blocks, height gages, micrometers. Accuracy is to "tenths," concave to convex.

A vernier scale is graduated in minutes to set the required angle. Two stop dogs control the arc. Setting can be made for concave radii to a minimum of 0.032 in. on 180-deg. arc when a small radius attachment is employed. The tool applies on a grinding machine table, dresses the wheel at the bottom.

If you write maker identify as IEN - 10318

SPRING . . For starter duty on small internal combustion engines

Source: SANDSTEEL SPRING DIVISION
145 Hudson St., 12th Floor, New York 13, N. Y.

Assures positive starting action

The company has added a new design of main spring for use in the starter mechanism on small internal combustion engines. The new spring is available in ¾ in. width and from 6 ft. to 12 ft. in length. Thickness ranges from 0.025 to 0.042 in. and is subject to specification. Characteristics are ability to retain resiliency and a sufficient amount of reserve power to function properly for a long period of service. The company is prepared to provide technical assistance.

If you write maker identify as IEN - 10319

MOTOR . . Vertical ac. unit, 1/3 hp., for sump pumps, mixers

Source: HOOVER CO.
66-70 Brook Ave., North Plainfield, N. J.

NEMA dimensions

Ball bearing construction and drip proof design with a built-in float switch, thermal protector, and rigid coupling characterize this new ⅓-hp. split phase motor. It is supplied with 8 ft. of rubber covered cord and plug and is designed for direct mounting on a support column. Operation is at 1,725 rpm. on 110-volt 60-cycle ac. with 50-deg. C. temperature rise.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 56

If you write maker identify as IEN - 10320

—prevent it with BWH ROTOCURED Belts!

Belts made by the flat press method start with two, ten, twenty or more strikes on them—depending on the length. Weakened segments result at 30- to 40-foot intervals because of press overlaps and hence *overcuring*. The overlapping can't be avoided because each section when cured advances *less than a full press length*. Result: Premature failure.

To eliminate these weak segments, BWH engineers pioneered ROTOCURED CONVEYOR BELTS. They're made by continuous, constant motion curing. This endless technique of curing by eliminating overlapping, eliminates the weak segments. *Every inch* of the belt you buy is *FIRST QUALITY*.

You'll see this quality in *Increased Belt Flex Life* (up to 40%) *Elimination of Mechanical Distortion at the Press Ends . . . Constant, Uniform Stretch . . . Uniform, Abrasion-Resistant Covers.*

If you have a tough conveying problem—put it up to your BWH distributor and BWH ROTOCURED BELTS. Watch the cost per ton of material conveyed *go down!*

BWH — Another Quality Product of **BOSTON WOVEN HOSE & RUBBER COMPANY**
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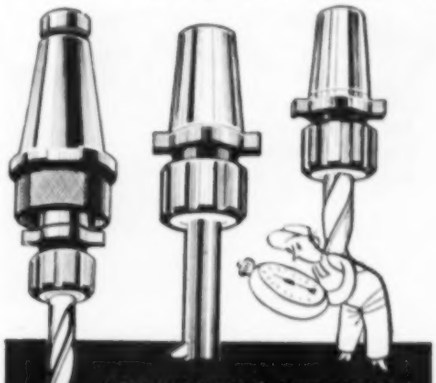

NEW INGENIOUS UNIVERSAL "KWIK-SWITCH" TOOL HOLDER PERMITS 10 SECOND TOOL CHANGES WITHOUT ACCURACY LOSSES

— UNIVERSAL ENGINEERING CO.

FRANKENMUTH 6, MICHIGAN

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HELICOID

The gage that retains its original accuracy longer, lasts longer, costs less per gage, per year

FOUR HELICOID FEATURES

1. Stainless Steel Helicoid Roller (no gear teeth)
2. Stainless steel hair spring
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4. Corrosion-resistant link and screws

• HELICOID GAGES, which do not have gear teeth to wear out, are made in a full range of pressures . . . in various sizes and shapes, with black, white and phosphorescent faces. For wall or stem mounting, flush or panel mounting, or flangeless. No finer gages are made. Helicoid Gages cost less in the long run.

Write today for the Helicoid Gage catalog

HELICOID *Pressure • Vacuum* **GAGES**

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Another **FIRST by ARO**

Instant PUSH-BUTTON *Reverse*

A REVOLUTIONARY SCREW DRIVER AND NUT SETTER

ARO's new push-button valve means instant reverse action . . . no need to remove from work . . . no stopping to turn levers . . . no wasted time.

Adjustable clutch (available with positive clutch) Length 7-11/16" . . . outside diameter 1-5/16" . . . weight 1.4 lb.

This outstanding tool must be seen in action to appreciate its amazing action. Write for literature.

The Aro Equipment Corporation, Bryan, Ohio.
Aro Equipment of Canada, Ltd., Toronto

ARO AIR TOOLS Also . . . LUBRICATING EQUIPMENT . . . HYDRAULIC EQUIPMENT . . . AIRCRAFT PRODUCTS . . . GREASE FITTINGS

If you write maker identify as IEN - 10324

EDWARD E. ROBINSON

METERING PUMP for HOT WAXES and CEMENTS

- Filling
- Sealing
- Potting
- Insulating
- Cementing
- Impregnating
- Weather Proofing

Transformers, Condensers, Rectifiers, Sockets, Switches, Wiring Devices

Robinson Metering Pump being used to forcibly eject metered amounts of cement into wire brush handle. Reservoir temperature 350° F.

Not a gravity dispenser — Forcibly ejects hot waxes and cements. Thermostatically controlled heat — Variable with a maximum reservoir temperature of 450° F. Motor driven, clutch actuated — 2/3 second per ejection. Variable discharge — Ejections changed in 2 seconds, without tools. Reduces unit costs—No skilled operator required. Saves material — reduces rejects. Easily installed — Adaptable to any production set-up.

For complete information on this modern production tool and its possible application to your requirements, write for Bulletin No. EM 8-51

EDWARD E. ROBINSON INCORPORATED
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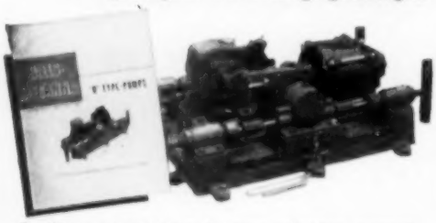
Here's a handy guide to the selection of metering and proportioning pumps



In this new catalog and pump selection manual for Hills-McCanna "U" Type Metering and Proportioning Pumps is all the information for the selection of exactly the right pump for handling over 300 substances. If your operations involve the metering or proportioning of small volume flows, we'll be pleased to send a copy on request. HILLS-McCANNA CO., 2347 W. Nelson Street, Chicago 18, Illinois.

HILLS-McCANNA
metering and proportioning pumps
Also Manufacturers of Saunders Patent Diaphragm Valves
Force Feed Lubricators • Magnesium Alloy Sand Castings

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Exclusive! American Drum and Barrel Cradles are designed for one-man handling.
Exclusive! American's disappearing patented loading bar adds speed and safety.
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Clip coupon and mail today.

THE AMERICAN PULLEY COMPANY
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Complete line of Pressed-Steel Hand Trucks • Steelite Industrial Wheels • Drum King Hand Truck

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Please send me more information on American Drum and Barrel Cradles.
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NEW LITERATURE — Concluded

TUBES . . Of plastic for corrosion-resistant service, also pipe and duct to 29½ in. o. d.; sizes, dimensions, strength, fittings, resistance. Catalog. 12 pages. American Agile Corp., P. O. Box 168-2, Bedford, Ohio **IEN-01029**

TUBES . . Fiberglas-reinforced plastic tube, 4 to 10 in. o. d. standard, to 36 in. special; properties, joining, working. "Reflin Tubing", 5 sheets. Reflin Co., 5523-27 Higuera St., Dept. A-9, Culver City, Calif. **IEN-01030**

VALVES . . Type F-51 relief valve for hot-water tanks and heaters; performance chart, also a pressure-reducing boiler feed valve. Bulletin 290, 4 pages. A. W. Cash Valve Mfg. Corp., 6912 E. Wabash, Decatur, Ill. **IEN-01031**

VALVES . . Forged steel valves for 1,500 and 2,500-lb. service; design features, pressure-temperature ratings, applications. Catalog 12-G-1, 8 pages. Edward Valves Inc., 1235 W. 145th St., East Chicago, Ind. **IEN-01032**

VALVES . . Double-cushioned hydraulic check valve for steam, air, gas, oil, water, liquids; sizes, pressures, dimensions. Bulletin WS-1, 2 pages. Golden-Anderson Valve Co., 2079 Keenan Bldg., Pittsburgh 22, Pa. **IEN-01033**

VALVES . . For boiler water feed, low-water cutoff, level control, relief; capacity curves, dimensions, ratings. Bulletin SC-2, 24 pages. McDonnell & Miller Inc., 3502 N. Spaulding Ave., Chicago 18, Ill. **IEN-01034**

VALVES . . Fire checks and safety blowouts for gas-air combustion equipment; selection information, piping diagrams. Bulletin SC-1006, 12 pages. Selas Corp., 552 E. Erie Ave., Philadelphia 34, Pa. **IEN-01035**

VENTILATING . . "Bifurcator" duct fans to exhaust hot, flammable or explosive fumes and gases; capacities and dimensions to 48 inches. Catalog DB-4-52, 8 pages. DeBothezat Fans, 552-56 12th Ave., East Moline, Ill. **IEN-01036**

WASHROOMS . . Washfountains and showers for group use; design features, types, colors, layout suggestions. Catalog 5204, 24 pages. Bradley Washfountain Co., 2219 W. Michigan St., Milwaukee 1, Wis. **IEN-01037**

WATER TREATING . . Organic materials to treat water against corrosion, scale and algae; summary on 11 materials in drums ready to use. "A New Way . . .", 4 pages. D. W. Haering Co., Harlandale, San Antonio 4, Texas **IEN-01038**

WEIGHING . . Scales to weigh products from stampings to meat; picture review on platform, portable, bench, hopper, counting scales. Mailing folder Y-1, 16 pages. Detecto Scales Inc., 538-42 Park Ave., Brooklyn 5, N. Y. **IEN-01039**

WELDING . . Bronze rod with a flux coating to assist in bonding with a minimum of cleaning; properties and suggested tests. "EutecRod 148FC", 2 pages. Eutectic Welding Alloys Corp., 40-42 172nd St., Flushing 58, N. Y. **IEN-01040**

WELDING . . Engine-driven 200-amp. dc. welding machine with 3-kw. ac. power takeoff; specifications. Bulletin B-5455, 8 pages. Westinghouse Electric Corp., 511 Wood St., Dept. IEN, Rm. 1110, Pittsburgh 30, Pa. **IEN-01041**

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If you write maker identify as IEN - 10327

ONLY CYCLONIC COMBUSTION GIVES 66% MORE POWER per sq. ft. of heating surface

Cyclonic Combustion, the revolutionary new flame control used exclusively in Cyclotherm steam generators, reduces heating surface requirements from 5 to just 3 sq. ft. per B.H.P.—produces 66% more heating power per sq. ft.

Cyclonic Combustion controls flame characteristics in a revolving spiral vortex traveling the full length of the furnace to insure the maximum in heat transfer without direct flame impingement or hot spots. This high heat transfer rate enables Cyclotherm 2 pass generators to maintain a guaranteed minimum efficiency of 80% for any steam requirement—at a saving of up to ½ the space of conventional package steam generators.

Cyclotherm steam generators with patented Cyclonic Combustion offer these additional features: Full power operation from a cold start in 15 to 20 minutes. Savings up to 50% on maintenance. Greater fuel savings. Boilers designed for oil or gas operation from 18 to 500 h.p., 15 to 200 PSI operating pressure.

Find out how Cyclotherm will fill your steam requirements. Write today for free illustrated folder.

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DIVISION UNITED STATES RADIATOR CORP.
CYCLOTHERM, DEPT. 89, OSWEGO, NEW YORK

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Temperature control is combined with a single pole switch to provide a thermostat that has many industrial applications. If the temperature at any dial setting—through any cause—exceeds the temperature range of the control by approximately 7% in liquids or 12% in air, the current is automatically cut off and the switch locked in open position. The switch remains open until closed by pressing the manual reset button.

You can mount this control in any one of four positions. Standard size bulbs and capillary tube lengths provide great flexibility to meet installation needs. Available in direct or reverse acting models with a maximum temperature range of 550°F

Write for full information.

In Home and Industry EVERYTHING'S UNDER CONTROL
Robertshaw® THERMOSTAT DIVISION
Robertshaw-Fulton Controls Company • Youngwood, Pennsylvania

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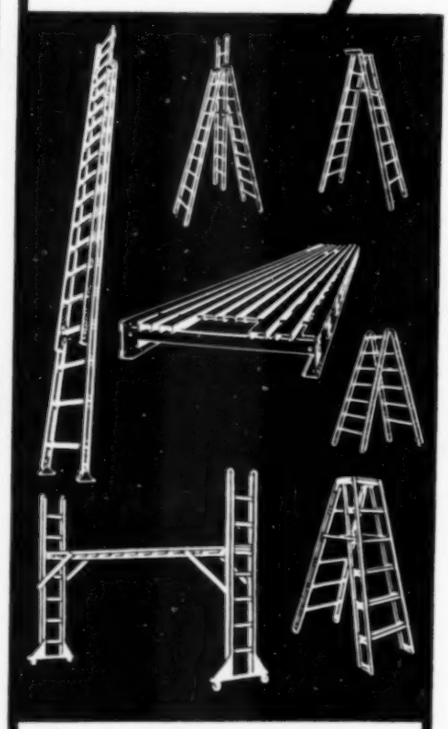
ALUMINUM LOUISVILLE LADDERS

The contractor's choice for rugged, serviceable equipment. Unequalled for "on the job performance"—Louisville patented construction securely fastens the rungs to side rails—the most effective way to eliminate rung turning and loosening. And most important . . . these facts are proven every day by contractors, large and small—throughout the country.



The complete line of standard contractor products. Extruded aluminum side rails—corrugated rungs—riveted assembly—light weight channel decking, the last word in modern practical equipment. There is ECONOMY in QUALITY.

Try Safe-Weight . . .
good equipment builds customer confidence.

AVAILABLE THROUGH BETTER DEALERS

LOUISVILLE LADDER COMPANY
1101 W. Oak St. — Dept. 7 — Louisville 10, Ky.

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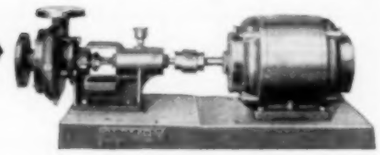
FOR PROCESS AND MEDIUM DUTY CHEMICAL SERVICE

dependability and economy are assured

with this Warren-Quimby Type "G" Pump



This Warren-Quimby Pump is designed to give both dependable and thoroughly economical satisfaction in process industries and chemical plants having semi-critical requirements. It has proven its merit conclusively whenever correctly applied.

Simplicity of design, sturdy bearings, extra deep stuffing box, tapped catchall, together with strong construction throughout the entire rigid assembly, all contribute to long, useful life at moderate cost.

It is available in 1, 1¼, 1½, 2 and 3 inch discharge sizes. Capacities up to 400 GPM—heads up to 240 feet.

SEND FOR BULLETIN WQ-213 giving Specifications, Selection Chart, etc.

WARREN PUMPS

WARREN STEAM PUMP COMPANY, INC. WARREN, MASSACHUSETTS

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You can depend on the rugged MARK-TIME "5400" Bell Time Switch

SPECIFICATIONS

UL approved for 20 ampere, 125 volt, 1 HP or 10 ampere, 250 volt operation, AC only. Timings available from 60 seconds to 5 hours. Normally supplied with center stud mounting. Other mountings available on request.

This Mark-Time switch is built to uphold the reputation of your product. Install it in your appliances, devices or machines, and give your customers a *double-purpose* time switch. "5400" turns OFF the circuit at the end of a pre-set time period . . . and gives a clear warning bell signal. Your customers will like that *double* service!

"5400" has a wide range of applications . . . is available with a wide variety of modern dials and knobs . . . can be supplied as an "ON" type of unit on special order.

Write today for full details and prices.

MARK-TIME

M. H. RHODES, INC.

HARTFORD, CONNECTICUT

Manufactured and sold — Canada by SPERRY GYROSCOPE OTIAWA, Limited 3 Hamilton St., Ottawa, Ontario, Canada

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PRINTING . . Photocopy equipment exposes, develops, delivers to use

Source: REMINGTON RAND INC. 315 Fourth Ave., Room 1618, New York 10, N. Y.

Ready to use as delivered

Copyfix trade names new assembly of the company's previously developed Portagraph contact printing machine, or an equivalent unit of this equipment, negative and positive Copyfix sensitized paper and the new Copyfix developer and roll type drier assembled in a motor driven housing. Available also to specification are two sizes of dispensers for the sensitized paper. One takes 8½ by 11-in. sheets, the other 8½ by 14 inches.

The Copyfix developing and roll drying machine will take work to 14 in. in width and any length. If the user does not have his own Portagraph printer or its equivalent he can specify one to accompany the Copyfix machine.

Operation starts with the contact printer into which an original and a sheet of Copyfix negative paper are placed. The exposed negative and the original are removed after a period of exposure from the printer and the exposed negative is placed face to face with a sheet of Copyfix positive paper. The two are run through separate slots at the front of the Copyfix machine. They pass through developing fluid held in the machine and then travel between motor driven rollers to emerge adhered to each other from a delivery slot at the rear. They are pulled apart and on the positive sheet is a photo-exact copy of the original reproduced in black on white.

If you write maker identify as IEN - 10335

SWITCH . . Sealed mercury element for 10 amp. pulse in 110 volt circuit

Source: SAXL INSTRUMENT CO. 20 Depot Road, Harvard, Mass.

Sharp pulse and cut off

The glass tube that forms the housing of this new mercury switch element contains a drop of mercury and, near its center, two electrodes. Leads from these electrodes form the center around which the glass tube can be revolved by a suitable control. When the tube does revolve the mercury drop rolls past the electrodes, short circuiting them for an instant to provide the pulse action. There is no danger of arcing. The mercury cannot be obstructed. It will not oxidize. It is of the type that can operate at very low temperatures. The pulse can be employed for control purposes. Rotating effort is negligible.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10336

ELWELL-PARKER *Trucks* CUT MAN-HOURS *75%!*

In a western cold storage plant four of these E-P trucks plus operators handle as much material as 16 men did by manual means. Trucks also high-stack to utilize *ALL* storage space. Because trucks are battery-electric powered, there are no fumes to contaminate foods.

Elwell-Parker trucks are furnishing benefits like these in over 300 industries. Get the full story by writing for—

NEW ILLUSTRATED CATALOG

THE ELWELL-PARKER ELECTRIC CO.

4064 St. Clair Avenue • Cleveland 3, Ohio

If you write maker identify as IEN - 10337

WHAT SAVINGS Could you make with *Fullergript* BRUSHING

These metal-backbone brush strips bring to many industries a new opportunity to cut production costs — because *Fullergript* brushing is the answer to many problems. Sizes, to date, run from ¼ inch to 18½ feet in length. Shaping possibilities present almost unlimited mounting variations. Look into the promising methods opened to you by *Fullergript* power brushing. Write today.

Fullergript

Fuller INDUSTRIAL PRODUCTS DIVISION

3583 MAIN STREET HARTFORD 2, CONN.

Fullergript, Wet and Dry Mops, Brooms, Floor and Special Brushes.

If you write maker identify as IEN - 10338

WRENN PAPER COMPANY

SELECTS B&S *SHEAR-CUT* SLITTER-REWINDER

The Wrenn Paper Company, widely recognized for its high quality products, was faced with the problem of slitting a hard-to-handle material. Clean, square edges and uniformly wound rolls were of utmost importance.

After considering several machines, the Bagley & Sewall #15 Shear-Cut Slitter-Rewinder was selected.

B & S Slitters and Rewinders are doing outstanding jobs in mills and converting plants all over the country. Their many unique money-saving advantages make them the first choice of the industry. Before you buy, *compare*...and your choice, too, will be B & S Slitting and Rewinding equipment.

For full details write to The Bagley & Sewall Company, Watertown, New York.

Inserts show Shear-Cut Slitter Units

BAGLEY & SEWALL

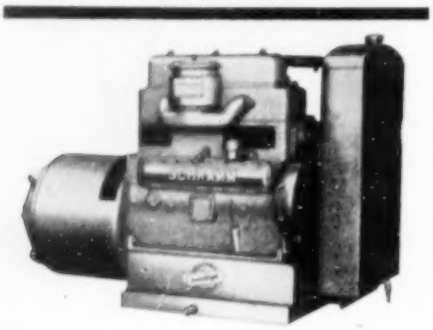
designers and builders of

WATERTOWN, NEW YORK

QUALITY MACHINERY SINCE 1883

Foreign Representative: CASTLE & OVERTON, INC., 630 Fifth Ave., New York 20

If you write maker identify as IEN - 10340



Direct Motor Drive Compressor With Cooling Unit

- NO ELABORATE FOUNDATIONS WHEN INSTALLING THE MODERN SCHRAMM AIR COMPRESSORS.
- VIBRATIONLESS . . . EASY TO MOVE . . . EASY TO INSTALL.
- FURNISHED COMPLETE WITH ALL NECESSARY ACCESSORIES.
- SIZES FROM ½ TO 100 HORSEPOWER, DIRECT CONNECTED, V-BELT DRIVE AND TANK MOUNTED.

Write for Bulletin SBB-51A

SCHRAMM INC. THE COMPRESSOR PEOPLE WEST CHESTER PENNSYLVANIA

If you write maker identify as IEN - 10341

HOW TO GET THE RIGHT PAINT FOR ONE-COAT COVERAGE

New, free book brings industrial painting facts up to date. We don't make paint. But to help you get full value from the paint you buy, we'll send you this fact-packed book on aluminum paints. Read it before you plan another paint job. It can save you time and dollars.

You may know that aluminum paint is best for many places in your plant. But do you know what *kind* of aluminum paint is best for each job? Some are specially formulated for painting metal and masonry, others for wood, others for heated surfaces. Mail the coupon for the free book that answers these and hundreds of other paint questions.

SEND FOR FREE BOOK

ALUMINUM COMPANY OF AMERICA,
Paint Service Bureau, 1786-J Gulf Bldg., Pittsburgh 19, Pennsylvania.

Please rush me free copy of "Painting with Aluminum."

Name (please print) _____

Address _____

City _____ State _____

We plan to paint the following _____

Look for this shield on aluminum paints made by many paint manufacturers using ALCOA PIGMENTS.

ALCOA ALBRON®

If you write maker identify as IEN - 10343

JACK . . Pneumatic design lifts a motor vehicle for servicing

Source: HOMESTEAD VALVE MFG. CO.
P. O. Box 85-A, Coraopolis, Pa.

Patent applied for

Hoister trade names a new wheel mounted pneumatic jack that can be run in under the front or rear axle of a motor vehicle to lift that end to a height maximum at 53 inches. Operation is from a shop line with pressure at 80 to 120 pounds. Lift action can be stopped at any one of ten points and the load transferred to a dog and ratchet to prevent accidental release.

Two sizes rate 3,000 and 5,500-lb. load capacity. Widths are 30 and 34 inches. Lengths are 67 and 70 inches. Distance between the load fingers is 19½ and 22¾ inches. Reach under the vehicle is 56 and 53 inches. Weights are 315 and 550 pounds.

If you write maker identify as IEN - 10344

SEALING . . Liquid material for ignition lines, wiring, batteries

Source: REYNOLDS INDUSTRIES INC.
4502 Euclid Ave., Cleveland 3, Ohio

Please note our error

We should have quoted $2.25 as the list price for the company's Sherolite water-proof sealing material in our previous description IEN-5000-52. The $1.35 we did quote in error is the dealer price.

If you write maker identify as IEN - 10345

LUBRICATING . . Dry graphite in 12-ounce pressurized container

Source: REYNOLDS INDUSTRIES INC.
4502 Euclid Ave., Cleveland 3, Ohio

List is $2.19 per can

Colloidal graphite is delivered in a fine dry mist from this new Aerosol pressurized container upon pressing a button on the container top. The graphite will penetrate into narrow openings and will spread on friction surfaces to lubricate them without dripping. It can be employed at high or low temperatures. The pressure medium is a dry gas.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10346

MYSTIK® BRAND TAPES SELF-STIK

14 Colors!

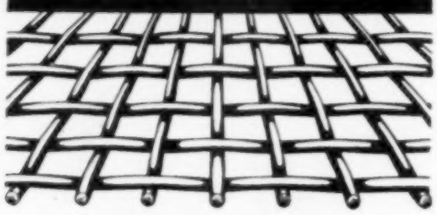
To identify . . . code . . . decorate . . . trim

Self-Stik Mystik® Brand Cloth Waterproof Tapes are available in 14 colors . . . *white, black, red, green, blue, yellow, brown, wine, pink, tan, gray, light blue, light green* and *olive drab*. No other tape offers this range of colors to multiply the many uses in your operations. Takes the place of permanent painted stripes, decorations, on many products. Makes decorative hinges, bindings. Write for information and free samples. Mystik Adhesive Products, 2644 North Kildare Avenue, Chicago 39.

© Mystik Adhesive Products, 1962 Trademark Mystik Registered

If you write maker identify as IEN - 10347

CAL-WIC WIRE CLOTH



meets all STANDARD and SPECIAL requirements

Either as original equipment or for specialized uses in filtering, screening, grading, cleaning or processing, Cal-Wic Wire Cloth is available in the right weave, mesh and weight to give you long-wearing, dependable service.

Made in different types of metals and alloys for high resistance to chemical action, corrosion, abrasion and temperature extremes.

For additional information write or phone our nearest sales office.

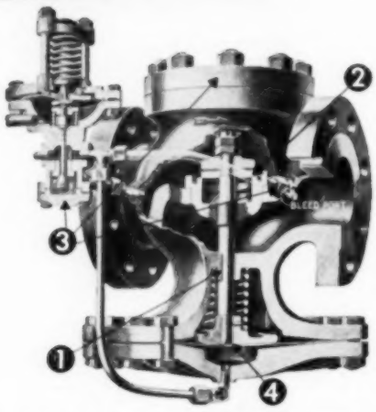
THE COLORADO FUEL & IRON CORPORATION – Denver, Colorado
THE CALIFORNIA WIRE CLOTH CORPORATION – Oakland, California
WICKWIRE SPENCER STEEL DIVISION – Clinton, Massachusetts

CAL-WIC CFI
INDUSTRIAL SCREENS
THE COLORADO FUEL AND IRON CORPORATION

If you write maker identify as IEN - 10348

Here's Why SPENCE REGULATORS

CUT COSTS . . . REDUCE MAINTENANCE



Thousands of installations throughout the country have proved that Spence Pilot-Operated Regulators provide *dependable, trouble-free* pressure and temperature control year-in, year-out. Here are a few of the many Spence features that save you money . . . help keep *maintenance at a minimum.*

1. PACKLESS CONSTRUCTION of all Spence main valves and most pilots *eliminates the need for closely fitted parts* that may stick or bind due to uneven expansion or foreign matter.

2. DURABLE SECO METAL SEATS AND DISCS resist wiredrawing. More than 20 years of experience with SECO Metal *has failed to produce one case where it has been cut by steam.*

3. EASY TO CLEAN WITHOUT DISMANTLING — The seat and disc of the main valve and pilot can be cleaned and any working part removed *without taking the main valve out of the line.*

4. LONG-LIFE METAL DIAPHRAGMS, under usual conditions, never require replacement. The durable spring in the Spence Regulator operates at low unit stress . . . *out of the path of the steam* or other fluid flowing through the valve.

FREE BULLETIN NO. 4000 gives complete data . . . contains full color, fully illustrated description of the operating cycle of a Spence Regulator.

Spence

EE-104

SPENCE ENGINEERING COMPANY, INC.
WALDEN, NEW YORK

If you write maker identify as IEN - 10350

ALL PEERLESS MOTORS ARE "Peerless Registered"

MORE than 90% of all Peerless Motors are custom manufactured to meet the specific operating requirements of the equipment with which they are to be used. So we "Peerless Register" every motor before shipment. The words "Peerless Registered" are a trademark, recorded in the U.S. Patent office. Only Peerless Motors can bear this phrase, and only Peerless Motors offer you this protection.

This registration record is assurance to both you and your customer that the Peerless Motor has been properly designed for your equipment so as to give best possible performance and long, satisfactory service. And the registration record makes possible the quick identification of any Peerless Motor — anywhere.

THE PEERLESS ELECTRIC CO., WARREN, OHIO
Manufacturers of Quality Motors Since 1893
Single Phase • Polyphase • Direct Current • ¼ to 18 H.P.

Peerless-Electric MOTORS·FANS·BLOWERS

If you write maker identify as IEN - 10351

D + V + X = HYPREZ DIAMOND COMPOUNDS

Formula for finer faster finish

D — DIAMONDS—Clean, sharp, particles, uniformly graded to N.B.S. standards, evenly distributed for fast cutting, lapping and polishing.

Valves, Seals Tools, Parts

V — VEHICLE — An exclusive formula holding diamonds in permanent suspension, producing finer faster finishes.

X — EXPERIENCE—Thousands of the country's most important jobs have proved Hyprez versatility and savings of time, materials and production costs.

Dies, Molds Hobs, Gages

HYPREZ, the original Diamond Compound, is available in types and grades for every finishing requirement. Packed in 18- 9- and 5-gram sealed cartridges for use with the Hyprez Applicator Gun.

Write Dept. E952 for complete information or free demonstration

HYPREZ DIVISION
ENGIS EQUIPMENT COMPANY
431 South Dearborn St., Chicago 5, Ill.

If you write maker identify as IEN - 10352

Using leather in your hydraulic process?

Hydraulic Cylinder Cup

... then consider MOLDED SYNTHETIC RUBBER CUPS

MOLDED RUBBER CUPS cut production costs 4 ways:

- Rubber costs less
- Rubber is more uniform
- Rubber is easier assembled
- Rubber outlasts leather components

MOLDED RUBBER has 1001 Uses . . .
Oil Seals • Molded Gaskets • Mechanical Parts

WRITE TODAY for samples of molded rubber items. Enclose your blueprints for prompt quotations. Components are unlimited as to size and shape, color excepted.

OUR SPECIALTY: Bonding Rubber To Metal

ADVANCE RUBBER CO., Incorporated
1702 Washington Ave. No., Minneapolis, Minn. ALdrich 4717

If you write maker identify as IEN - 10353

TESTING . . Altitude chamber simulates conditions to 80,000 feet

Source: TENNEY ENGINEERING INC.
24-28 Avenue B, Newark 5, N. J.

To service test at home

Tenney Zphere trade names a new standardized line of altitude chambers to enable a purchaser to select the unit that most closely meets his requirements. The chambers simulate altitude conditions between sea level and about 80,000 feet. Temperature ranges from plus 200 to minus 100 deg. F. Relative humidity can be controlled between 20 and 95 per cent. Standard equipment includes temperature recording controls, pressure control and altitude gage or mercury manometer. All are mounted on the chamber.

Average rate of climb can be simulated at 3,000 fpm. to 50,000 feet. Controls can be preset for any desired altitude, temperature or per cent of humidity. Interior test chamber dimensions range from 18 by 18 by 22 in. to 48 by 96 by 60 in. in 10 steps.

Connections can be made through a lead-in panel with 8 terminal posts and 4 thermocouples. Additional high voltage lead-ins can be specified with side viewing windows, hand operated tuning shafts, utility ports, stainless power shafts.

If you write maker identify as IEN - 10354

HEAT TREATING . . Electric furnace, 15 kw., temperature to 2,500 deg. F.

Source: PERENY EQUIPMENT CO.
891-5 Chambers Road, Columbus 12, Ohio

For continuous duty

New assembly FG-76 in the company's Series-FG electric furnaces, previously described IEN-1368-51, is characterized by assembly of the controls in the base of the furnace housing. Input to the heating elements is through a voltage regulating transformer with coarse and fine controls located on the front of the housing. An indicating controller with a lead wire and thermocouple are built into the assembly with a magnetic contactor and a current input meter. Overall dimensions are 33 by 40 by 70 inches. The heating chamber measures 8 by 16 by 6 inches.

Globar rod shaped elements with air cooled terminals are located beneath the U-shaped silicon carbide hearth and above the heating chamber. Each element extends through the furnace to permit replacement. The counter weighted door rides on rod guides set on an angle to provide wedge action. Movement of the door also actuates a valve to open a gas supply for a curtain across the opening when the door comes open.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10355

TO MACHINERY BUYERS

INTERSTATE BLUE BOOK of MACHINERY

An invaluable aid to every user of metal-working machinery. Issued regularly as a guide to one of the world's largest stocks of new, rebuilt and used machinery. Write today for FREE SUBSCRIPTION — no obligation.

INTERSTATE
MACHINERY CO., INC.
1451 W. Pershing Road, Chicago 9, Ill.

If you write maker identify as IEN - 10356

CAN YOU AFFORD NOT TO GIVE YOUR WORKERS PROPER Seating?

A tired worker costs MUCH more than a GOOD CHAIR

Royal's **515 STOOLS WILL HELP KEEP YOUR WORKERS AT PEAK EFFICIENCY...**

Resulting in More Work Produced per Man Hour and Lower Actual Costs per Chair.

- STURDY MASONITE INSERT IMBEDDED IN SEAT PAN.
- LEG EXTENSION FOR EASY HEIGHT ADJUSTMENT.
- ADJUSTABLE BACKREST.
- OVEN BAKED GREY ENAMEL FINISH.

60 DAY FREE TRIAL examine it... test it... use it without obligation

ROYAL METAL MFG. CO.
175 NORTH MICHIGAN AVENUE
CHICAGO 1, ILLINOIS

If you write maker identify as IEN - 10357

Improved Method Centrifugal SPRAY DRYER and CONCENTRATOR*

CONTRACT DRYING

We invite inquiries for Contract Drying in our fully equipped, Stainless Steel Plant in Chicago. Shipments can be made direct to our Railroad Switch Track or Truck Docks.

Improved method for **DEHYDRATING**

Solutions, emulsions and materials which can be handled in a liquid form including:

Chemicals
Pharmaceuticals
Milk Products
Blood or Blood Plasma
Soups, Vegetables, etc.

THE DRYING AND CONCENTRATING COMPANY DRYER

This complete spray drying plant employs a unique centrifugal-type spray head, and consists of a Drying Chamber, Concentrator, Air Heating Unit, Air Filter, Air Supply Fan, Powder Cooler and Sanitary Pumps with variable speed drives for handling the liquid material and controlling the moisture.

*CONCENTRATOR AVAILABLE SEPARATELY

The Concentrator can be operated as a separate unit for reducing liquid products to almost any desired degree of concentration, almost instantaneously, retaining neutral flavors and vitamins. 3638

DRYING and CONCENTRATING CO.
233 SOUTH MICHIGAN AVENUE, CHICAGO, ILLINOIS

If you write maker identify as IEN - 10358

A superior transfer pump for HARD-to-HANDLE LIQUIDS

Do you have a liquid handling problem? This Tokheim DOUBLE ACTION hand pump may be the answer. FAST—delivers 20 gallons per minute of most liquids. HIGH VACUUM—lifts gasoline 20 feet. ADAPTABLE—for drums, skid tanks or underground installations—handles a wide range of liquids. Check the list below. Then call your Tokheim representative, or write the factory for literature.

A TOKHEIM WILL HANDLE—

Acetates, Alcohols, Aromatic Solvents, Chlorinated Solvents, Glycols, Ketones & Ethers, Petroleum Solvents, Plasticizers, Petroleum Products

Also Miscellaneous Liquids Such As:

Ammonia, Anti-Freezes, Castor Oil, Caustic Soda Solution, China Wood Oil, Creosote, Freon, Glycerine, Linseed Oil, Liquid Soap, Pine Oil, Pine Tar Oil, Soy Bean Oil, Styrene, Tung Oil, Turpentine, Water

Tell Us Your Problem

TOKHEIM DOUBLE-ACTION HAND PUMPS

General Products Division
TOKHEIM OIL TANK AND PUMP COMPANY
DESIGNERS AND BUILDERS OF SUPERIOR EQUIPMENT SINCE 1901
1654 WABASH AVENUE FORT WAYNE 1, INDIANA
Factory Branch: 1309 Howard Street, San Francisco 3, California

If you write maker identify as IEN - 10359

Whether you grind soft or hard materials, there is a Sturtevant Grinder or Crusher exactly suited to your requirements.

Tough and rugged, Sturtevant Equipment has the built-in stamina to stand up under continuous operation. Most of this equipment has the "open door" accessibility which makes cleaning easy.

Look into Sturtevant Grinders and Crushers for your applications. These machines will give you the exact mesh you want . . . cut your costs by increasing production. Write today.

Sturtevant Mill Company
113 Clayton Street • Boston 22, Mass.

If you write maker identify as IEN - 10360

A WIDE RANGE INDICATING CONTROL

TYPE E8N

The type E8N indicating control is ideal for installations where an exact temperature reading must be readily available at all times. It is a broad range, precision-built unit that shows the exact temperature of the thermal bulb at all times. The E8N is compensated accurately for wide ambient temperature changes, is simple in design and contains no delicate mechanisms. Various models are available covering ranges of 300° F to 600° F between limits of -150° F to 600° F. On-off differentials available as low as .25° F. Complete details and electrical specifications are contained in bulletin #4-1, write for it today.

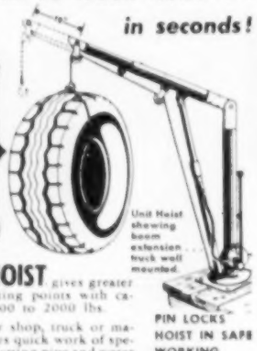
UNITED ELECTRIC CONTROLS COMPANY
80 School Street, Watertown, Mass.

STANDARD & SPECIAL THERMOSTATS & PRESSURE SWITCHES

If you write maker identify as IEN - 10361

From shop hoist to truck hoist . . . in seconds!

NEW... BOOM EXTENSION ADDS 25% LOAD TRAVEL



UNIT "Holiday" HOIST gives greater load travel plus three lifting points with capacities ranging from 1000 to 2000 lbs.

Hydraulically operated for shop, truck or machine, the Unit Hoist makes quick work of special handling operations. Setting pipe and water hydrants, working in manholes, reaching over obstructions are easy with the new 12" Boom Extension and optional Sheave Attachment.

REDUCE material handling time. Unit gives you perfect load control plus portability. Portable floor frame permits moving to any job in the shop. Hoist when transferred to any truck equipped with well swings 360° freely and locks in traveling position. *Write for Hoist Bulletin U-2.*

THE BEST WHEN HANDLING:

Drums	Pipe	
Motors	Tires	
Boxes & Crates	Farm Machinery	
Transmissions	Fixtures	
	Hydrants	

Floor Frame Model

UNIT Manufacturers of hydraulic cylinders for original equipment

UNIT MANUFACTURING CO.
1229 HARMON PLACE • MINNEAPOLIS 3, MINN.

If you write maker identify as IEN - 10362

MOTOR CONTROL . . Contactor mounts interlock for multiple action

Source: SQUARE D CO.
4039-43 N. Richards St., Milwaukee 12, Wis.

Bulletin 8536-9999

Design change has been made in the electrical interlock for the company's Size-2 and Size-3 NEMA contactors and starters. The interlock consists of an insulating block on which a stationary part and a separate movable contact are mounted. The block fastens to the contactor base by two screws. The movable contact fastens to the contactor yoke bar assembly.

A maximum of five base mounted interlocks are available for each contactor. They can be added or changed in the field without disturbing the wiring and without removing the starter from its enclosure or from the plate on which it is mounted.

The interlocks operate pilot lights or other signaling devices. They also can be employed to prevent or insure simultaneous operation of a second motor starter. Application is on standard contactor units in the company's line.

If you write maker identify as IEN - 10363

TESTING . . Graduated trough checks consistency of viscous fluids

Source: CENTRAL SCIENTIFIC CO.
1702 Irving Park Road, Chicago 13, Ill.

$57 with instructions

Monel Metal trough in this new apparatus mounts a spirit level at one end and a pair of leveling screws at the other. It is fitted with a vertical spring operated latch-released gate located about 2 in. from the leveling screw end. The bottom of the trough is graduated in 0.5-cm. divisions from the gate to the spirit level end.

The gate is closed manually and is held by the latch. Then a sample of the fluid to be tested is filled into the small compartment. After making certain that the trough is accurately leveled and that the fluid is at the right temperature for test, the gate is released by depressing the lever. The distance the fluid travels over a period of 1 min. is noted as a measure of consistency. Overall dimensions are 12 by 2½ by 1 in. on the trough. Ceneo-Bostwick Consistometer No. 24925 is the designation.

Identify as IEN - 10364

Durant counter riding on a pair of rubber rimmed wheels on a run of wire screen to measure screen length had trouble keeping its tires on. They would wear out under abrasive action of the screen. Then they were replaced with Polymer Corporation nylon rims. Now the counter has been in satisfactory service for about seven months with no tire wear.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10365

BARRETT Nifty-Lifter SYSTEM
Simple • Safe • Low-Cost

Nifty-Lifter skids are available with platforms (as illustrated). Also — Pipe or Wood Stake type • End Rack type • Box type • Shelf type

The Barrett Nifty-Lifter gives you a complete materials handling system at a surprisingly low cost. Operator merely wheels Nifty-Lifter under lifting horn on skid. Downward handle motion lifts skid legs clear of floor. Further lowering of handle releases latch; load settles gently under full control. Popular skid sizes, 24" to 56" wide, meet any product handling requirement. 1000 to 4000 lb. capacities. Simple, husky, long-lasting. An outstanding value! *Ask for prices.*

BARRETT-CRAVENS COMPANY
4641 S. Western Blvd., Chicago 9, Illinois
Representatives in All Principal Cities

Canadian Licensee: S. A. Armstrong, Ltd., Toronto, Canada

BARRETT
One man does more than 3 or 4 . . . with a Barrett

If you write maker identify as IEN - 10366

HERE'S HOW IT WORKS!

YOU DON'T HAVE TO KICK THE BUCKET TO CLEAR IT—IF IT'S AN M-T-MATIC

Irresistible leverage sweeps out SAND—COAL—GRAVEL, or any granular materials, on every trip — *even if frozen or close-packed.* The secret is the separately mounted stripper-plate—which must push up and out when it starts over pulley radius. THOUSANDS NOW IN USE—handling *more* material at same or faster belt speeds. Saves belts—cuts maintenance — easy to install on any elevator conveyor — all sizes.

Standard buckets also available . .

★ Send for prices today (give present bucket size)

QUICK DELIVERY!

PEKAY MACHINE & ENGINEERING CO.
100 N. LA SALLE STREET CHICAGO 2, ILLINOIS

If you write maker identify as IEN - 10367

LIQUAMATTE and *your future*

what SIMPLIFIED WET BLASTING means to you

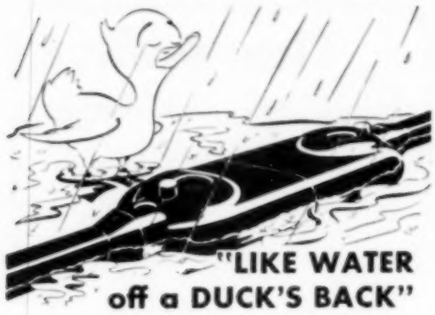
Through development of wet blasting, large savings have been made possible in finishing costs . . . and now Liquamatte makes wet blasting EVEN MORE practical, economical and convenient. The Liquamatte has 14 advanced design features that overcome the many operating difficulties usually found in wet blasting. Thus it reduces finishing costs to the very minimum. With the Liquamatte, "hand" finishes are produced mechanically in a matter of seconds, eliminating many tedious operations. Precision parts can be processed while holding tolerances of .0001". Scale and directional grinding lines are uniformly removed, greatly prolonging the life of expensive tools and dies.

Typical heat treated forging die, one half of which has been cleaned with the Liquamatte using a fine mesh Liquabrasive.

SEND TODAY FOR BULLETIN 23
It shows how Liquamatte's simplified design has reduced precision finishing costs to a new low.

American LIQUAMATTE WET BLASTING
WHEELABRATOR & EQUIPMENT CORP.
507 S. Byrkit St., Mishawaka, Ind.

If you write maker identify as IEN - 10369



"LIKE WATER off a DUCK'S BACK"

Moisture cannot penetrate the resilient rubber body of a JOY electrical connector . . . even mating pins and sockets are fully protected (when connected). Sealing action between plugs and sockets is automatically completed each time connections are made — through patented face construction of connectors.

Molded as integral Neoprene rubber units and permanently vulcanized to their cables — JOY plugs and inserts can't crack or shatter and are highly resistant to the deteriorating effects of grime, fluids, humidity and temperature changes. All the outstanding advantages of wear-resistant rubber are engineered to peak performance in JOY connectors. Write for descriptive bulletins. 749.2

JOY MANUFACTURING COMPANY
HENRY W. OLIVER BUILDING, PITTSBURGH 27, PENNSYLVANIA
IN CANADA: JOY MANUFACTURING COMPANY (CANADA) LTD. SARNIA, ONTARIO

If you write maker identify as IEN - 10370

FABRI-VALVE

ALLOY VALVES

control corrosive liquids!

FABRI-VALVE TRADE MARK

You save every way when you specify FABRI-VALVE! Why pay for unnecessary stainless steel structure when you get complete internal protection from materials handled with sufficient exterior protection under normal conditions from FABRI-VALVE'S more economical construction? Economical designs are also available for adverse conditions.

Write inquiries to dealer listed below or home office for descriptive literature.

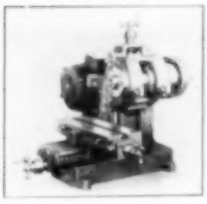
AGENTS:
SOUTHERN CORPORATION, Charleston, S. C.
FELKER BROS. MFG. CO., Marshfield, Wis.
NORTHWEST COPPER WORKS, Inc., Portland, Ore.
THOS. W. MacKAY & SON, Ltd., Vancouver, B. C.
CHANDLER BOYD CO., Pittsburgh 19, Penn.

FABRI-VALVE CO. OF AMERICA
2100 N. Albina Ave., Portland 12, Oregon

If you write maker identify as IEN - 10372

MILLING . . Bench type machine, motor driven spindle, 4 by 12 in. table

Source: BARKER ENGINEERING CO.
502 Green Road, Cleveland 21, Ohio



For those little jobs

Hand levers for the head and table movements have been replaced by lead screws and hand cranks in this new design of the company's bench type milling machine, previously described IEN-11699-51. Head movement on the vertical ways is now 3¼ in. and saddle movement is through 3 inches. The longitudinal table movement remains at its original 5 in. and the 4 by 12 in. work table itself has not been changed in construction.

Drive is by a ¼-hp. motor with belt connection for three spindle speeds of 875, 1,750 and 3,500 rpm. The spindle is made of nickel steel, hardened, ground and mounted on precision ball and roller bearings. It takes standard collets from 1/16 to ½ inch. Clearance hole in the collet draw tube will take ½-in. stock. Height is 15 inches. Weight is 152 pounds.

If you write maker identify as IEN - 10373

ROOFS . . Liquid coating material for maintenance use on tar and felt

Source: DASCO CHEMICAL CO.
1604 Thames St., Baltimore 31, Md.

$1.50 per gal. in 5 gal. container

Dasruf trade names a new fire resistant liquid containing asbestos and minerals for application by brush or spray on tar and felt roofs. The liquid is free from solvents that might attack the roof. It is not affected by short-wave light rays. It will remain serviceable in temperatures to 200 deg. F. and is available in red, green, gray and black.

If you write maker identify as IEN - 10374

RELAY . . Hermetically sealed for aircraft, contacts rate 3 amperes

Source: ADVANCE ELECTRIC & RELAY CO.
2433-37 N. Naomi St., Burbank, Calif.

Solder connections

Palladium is employed in the contacts for a rating of 3 amp. in this new single or double pole double throw hermetically sealed relay. Silver contacts can be specified with rating at 1½ amperes. The new unit meets specifications ANE-19. It is sealed to withstand pressures without leakage to an altitude of 85,000 ft. and to withstand vibration to 10 G with a minimum available power of 500 milliwatts. Coil resistance is to 16,000 ohms. Size is about 1 by ¾ by 1½ inches.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10375

Specify GM PRECISION-ENGINEERED
SERVO MOTORS
RELIABLE PERFORMANCE
RUGGED CONSTRUCTION

In the operation of —
- GUNFIRE CONTROLS
- ROCKET CONTROLS
- GUIDED MISSILES
- AIRCRAFT CONTROLS
- INDUSTRIAL CONTROLS

ACTUAL SIZE

G-M Servo Motors can be supplied to meet rigid military specifications with regard to humidity, temperature range, vibration and altitude. Available in 2, 4 or 8 pole construction and for frequencies from 60 to 400 cycles.

Write today for complete information.

Another product of GM LABORATORIES · Inc.
4334 NORTH KNOX AVENUE, CHICAGO 41, ILLINOIS

If you write maker identify as IEN - 10376

STOP HYDROSTATIC PRESSURE LEAKS THROUGH CRACKS or HOLES IN UNDERGROUND WALLS with SEEP-SEAL

STOPS THE LEAK IN 2 MINUTES

Water seepage, even hydrostatic pressure leaks, commonly found in underground concrete structures, are no longer a difficult problem to overcome. A simple, quick and most effective remedy is found in Seep-Seal. This amazing new formula, mixed with Portland cement, and inserted in any crack or actual hole in concrete, will set within 2 MINUTES to shut off ALL leakage. Ideal for manholes, elevator pits, reservoirs, subways, mine-shafts and similar structures. Also widely used in plaster-consistency for damp-proofing floors and walls.

Write for complete details and prices today. Immediate shipments

ROCK-TRED Corporation
Manufacturers of a Complete Line of Building Maintenance Materials
7460-7450 North St. Louis Avenue • Skokie, Illinois
In Canada: Rock-Tred Corporation (Canada) Limited, Toronto 3

If you write maker identify as IEN - 10377

SPRING WIRE

Absolutely uniform in gauge, finish and mechanical properties

ROEBLING is about the largest specialty wire manufacturer in America . . . and Roebling uniform quality always helps cut preparation time and boost production for users.

Typical of Roebling specialty products are mechanical spring wires including hard drawn, soft, annealed or oil-tempered M.B., H.B. and Extra H.B.; music wire; upholsterers' spring wire and valve spring wire . . . all in a full range of mechanical properties and finishes.

We can give you fast deliveries to meet your needs, right now! John A. Roebling's Sons Company, Trenton 2, N. J.

ROEBLING

If you write maker identify as IEN - 10378

TEMPERATURE RECORDING REGULATORS

Help Insure Uniform Quality at SMITH BROTHERS

For over 104 years Smith Brothers cough drops have been famous for their good flavor. Cooking operations here are accurately controlled and recorded by POWERS air operated regulators. They save labor and prevent losses caused by over-heating. Air conditioned packaging rooms also are Powers controlled.

When you want better temperature and humidity control for any process, heating or air conditioning system, contact our nearest office. There's no obligation. (657)

THE POWERS REGULATOR CO.
Over 60 Years of Temperature and Humidity Control
SKOKIE, ILL. • Offices in Over 80 Cities • See Your Phone Book

If you write maker identify as IEN - 10379

here's a dependable source for aluminum extrusions

• This pioneer in the aluminum extrusion business can furnish your extrusions in quantity and deliver on time. Send prints or sketches for prompt quotation. Buy your aluminum extrusions from the Big Name in the business.

USE THIS SPACE TO INDICATE EXTRUSIONS YOU NEED

MAIL TO YOUNGSTOWN MANUFACTURING FOR PRICES AND DELIVERY

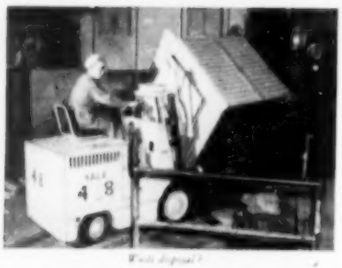
Buy from the BIG NAME in the Aluminum Extrusion Business

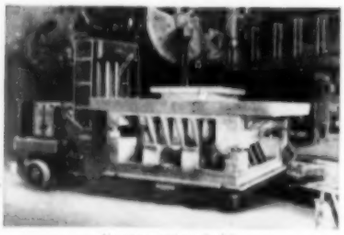
YOUNGSTOWN MANUFACTURING, INC.
66-76 S. Prospect St.
Youngstown 6, Ohio

SUPERIOR ALUMINUM EXTRUSIONS

If you write maker identify as IEN - 10380

B.F.Goodrich





Where do you use industrial tires?

Here's how

T&W ANALYSIS

can cut your costs

• We have a plan that is saving up to 30% on tire and wheel costs for industrial use users. It's called the Tire & Wheel Analysis Plan. It's applicable no matter what your usage of industrial tires. On request and without charge, a man who knows industrial tire problems looks over your operations, analyzes your particular needs. Then he makes maintenance and service recommendations. He also recommends the exact type, size, tread design and tread compound which best suits our operations. He shows you how to save through retreading. Remember his recommendations are impartial because B. F. Goodrich makes all types and kinds of industrial tires. The BFG man has no axe to grind for you one or two particular types. He has them all.

See your nearby B. F. Goodrich Dealer for your immediate industrial tire needs. For additional information on the B. F. Goodrich Tire & Wheel Analysis Plan, use the attached coupon. A similar plan is available for manufacturers of industrial hoisting equipment.

The B. F. Goodrich Co.
Department TW-262
Akron, Ohio

Please give me additional information on your new Tire and Wheel Analysis plan.

Name
Title
Company
City State

B.F.Goodrich

If you write maker identify as IEN - 10382

SPREADING . . Roll type machine coats drawing compound on sheet steel

Source: UNION TOOL CORP.
316 E. Market St., Warsaw, Ind.

Built to your order

Metal sheets to be press formed, are fed through this new roll type machine at a variable speed between 30 and 90 fpm. to receive a coating of drawing compound on one or both sides. The sheet moves first between a set of brush rolls that clean the surface and then between hardened steel coating rolls on which pressure can be adjusted at any amount to 100 pounds by means of air from a shop line. Pressure on the rolls provides deburring action and forces the compound into the pores of the metal. Doctor rolls, controlled by a hand wheel with micrometer adjustment, can be set to gage thickness.

Adjustments for work thickness range from 30 gage to ½ inch. The machine takes work measuring 1 to 112 in. in width. The compound is supplied continuously by a circulating pump. Water or solvent can be passed through the pump to clean the machine at the end of a run.

If you write maker identify as IEN - 10383

BEARING . . Metal-graphite design, self lubricating, to 10 in. diameter

Source: CARBONE CORP.
752 Myrtle Ave., Boonton, N. J.

Ask for Bulletin CP-L

Carbolube trade names a new material made of graphite or carbon with babbitt, copper, cadmium or silver in varying proportion between 35 and 70 per cent of weight of the metal. Bearings or parts are made in a process employing a combination of vacuum and pressure to produce required shapes and sizes. Production can be handled economically in large or small quantity.

Load pressures for bearing applications can range between 20 and 50 lb. per square inch of projected area with speeds ranging between 1,500 and 7,000 fpm. depending upon the grade of material. Recommended operating temperature is maximum at 350 deg. F. for a combination of babbitt and carbon, to 750 deg. F. when copper replaces the babbitt.

Identify as IEN - 10384

Excellent little piece of writing has been published and illustrated by Farrel-Birmingham in its four-page report on the Scoville continuous brass mill that has been in successful operation since 1949. Bars measuring 25½ in. width by 2½ in. in thickness come from the continuous casting machine. They are cut into 117-in. lengths for breakdown rolling. Thickness is now to be increased to 3 inches. The cold rolling is in seven passes to produce flat metal measuring 0.0540 in. by 62 feet.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10385

A Paid News Advertisement by Mathewson Machine Works

NEW ADJUSTABLE DRILL JIG eliminates layout; cuts drilling time

Used for drilling holes through round stock and hex stock from ¼" to 2" and cap screws from ¼" to 1½", the new Mathewson Adjustable Drill Jig eliminates layout and can cut drilling time on small lots to a fraction. And it eliminates the costs of special jigs for larger quantities. Holes for cotter pins, set screws, drive pins for hay-mow joints, oil holes in tubular sections, and wiring holes in cap screws, are all typical of the operation that can be done more economically with this jig. Hole diameters range from .062" to .531", using your A.S.A. standard slip bushings. The hardened V-block has two 60-degree V's for centering round or hexagonal stock, one for ¼" to 21/32" diameter, one for 21/32" to 2" diameter. Adjustable stop for locating work longitudinally for drilling any distance from end, may be used on either side. Adjustable bushing carriers hold slip bushings and clamp work securely. Jig highly successful in permitting use of inexperienced drill operators. For circular write to: **Mathewson Machine Works**, 26 Hancock St., Quincy, Mass.

If you write maker identify as IEN - 10386

Thermolier

Unit Heaters
4 Models
18 Sizes

CHECK THESE PRACTICAL, MONEY-SAVING FEATURES

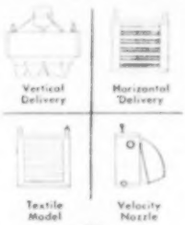
A thermostatic trap, the simplest and least expensive of all traps, is practical because of Thermolier's exclusive cooling leg.

Maximum capacity assured, annoying destructive water hammer eliminated — by built-in pitch of tubes and internal cooling leg which assure continuous drainage of condensate.

Damaging strains caused by expansion and contraction eliminated by "U" type expansion tubes.

Safety and durability assured with leak-proof tube-to-header construction.

Five other important construction features. Write for Catalog.



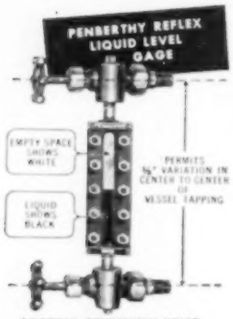
GRINNELL

WHENEVER PIPING IS INVOLVED
GRINNELL COMPANY, INC.
Providence, R. I.

If you write maker identify as IEN - 10387

PENBERTHY "Floating Shank"

Saves Time and Money in Gage installation



ANOTHER PENBERTHY FIRST

A feature available only on Penberthy drop forged steel (and alloy) gage valves, the "floating shank" automatically compensates for as much as ¼" variation in the center-to-center distance of the vessel tapping. This saves time and cuts the cost of gage installation . . . eliminates stresses often induced during mounting. Penberthy "floating shank" is available at slight additional cost. It will pay you well to specify "floating shank" on your next gage order.

Ask for Catalog 35

PENBERTHY INJECTOR COMPANY
DIVISION OF THE BUFFALO-ECLIPSE CORPORATION
Established 1886 DETROIT 2, MICHIGAN Canadian Plant, Windsor, Ont.

If you write maker identify as IEN - 10388

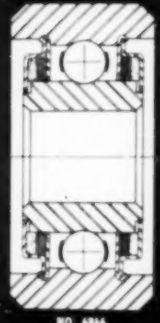
Ball Bearing "Specials"

"Specials" are ball bearings which have been especially designed to be "exactly right" for a particular application. Specials of unusual shapes and dimensions frequently offer the greatest possibilities for cost savings and product improvement. A typical application example is illustrated.

No. 6866, a cam follower on an agricultural harvester, replaces a precision bearing pressed into a specially machined outer tire . . . and the resulting improvements were:

1. Lower cost (over 30% savings).
2. Increased capacity.
3. More effective seal.
4. Packaged interchangeable unit.
5. Improved appearance and performance

Severe dust and dirt problems dictated the need of an efficient and rugged seal. No. 6866 seal has proved to be highly effective and durable.



NO. 6866 CAM FOLLOWER

NICE invites your inquiries

NICE BALL BEARING COMPANY
NICETOWN PHILADELPHIA PENNSYLVANIA

If you write maker identify as IEN - 10389

Run d-c Motors from a-c Lines

4 Models
1/15 to 3/4 hp
priced from
$75 to $230

Write for new
VARIAC Motor Speed Control
BULLETIN

GENERAL RADIO Company
275 Massachusetts Avenue, Cambridge 39, Massachusetts
90 West St. NEW YORK 6 • 920 S. Michigan Ave. CHICAGO 5
1000 N. Seward St. LOS ANGELES 38

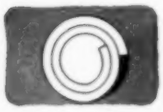
If you write maker identify as IEN - 10390

SPIROL PIN

U.S. and Foreign Patents Pending

SPRING COILS ELIMINATE PRECISION FITTING

A new fastening principle – spirally wound flexible coils – make a pin with unique qualities. SPIROL PIN opens the way to design improvements and cost savings by eliminating all precision drilling and reaming.



Note how spiral coils compress to fit snugly

The flexible spiral coils compress to fit shape of hole, locking pin in place, yet pin can be removed without damage and be re-used.

Thickness, tension, and number of coils can be varied to provide a wide range of shear, shock and vibration absorption properties. SPIROL pins are available for light, medium, or heavy duty applications. Consult our factory engineers.

Standard sizes of Spirol pins available from stock.

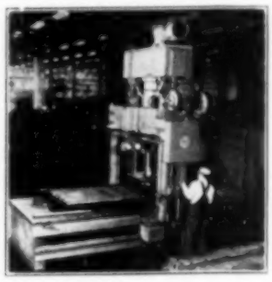
FREE! Write for sample pins and illustrated SPIROL folder.

C. E. M. COMPANY • DANIELSON, CONN.
Telephone: Danielson 4-2411

If you write maker identify as IEN - 10392

STRAIGHTENING . . Hydraulic press mounts traveling head and carriage

Source: LAKE ERIE ENGINEERING CORP.
325 Woodward Ave., Buffalo 17, N. Y.



Push button controls

Pressure rating is 200 ton for a new small assembly in the company's line of traveling head straightening presses. Previously developed machines in the line are available with capacities to 2,000 ton. Bed size on the new machine measures 16½ to 5½ feet. Longitudinal carriage travel is through 12 ft. and transverse head travel is through 4 feet. A two speed drive with operation at 120 ipm. maximum can be specified for both movements.

The main ram is arranged for closing speed at 250 ipm. and pressing speed at 17 ipm. Maximum stroke is 24 in. and maximum daylight is 36 inches. The carriage is mounted on ways on the bed and is equipped with dovetail keys on the side frames to grip the bed during pressing operations. Additional rigidity is provided by horizontal keys that secure the side frames to the cross-head above the bed and to the cross-tie beneath it. The 2,000-ton machine is built with a bed measuring 36 ft. in length by a little over 12 ft. in width. It provides a 52-in. ram stroke and 84 in. of daylight space.

If you write maker identify as IEN - 10393

TUMBLING . . Hexagon barrel encloses separate individual "pockets"

Source: TUMB-L-MATIC INC.
4508-12 Bullard Ave., New York 70, N. Y.

The Pocket Tumbler

Several products can be tumbled individually and kept separate from each other by this new multiple pocket tumbling barrel. The barrel itself is made of wood and is hexagon in section. It encloses 2 to 6 individual hexagon pockets into which the various items are filled. The main barrel is enclosed on five of its six sides to hold the pockets in place. Each is equipped with handles and covers that can be locked in place. Dimensions are 12 to 16 in. between opposite flats on the pockets.

Assembly of the main barrel is in a wood container that can be filled with water for the tumbling operation. Also available is a self-contained design that can be employed for either wet or dry operation. It does not include the outer box and takes water in the individual pockets. Single or variable speed drive can be specified.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10394

PRE-TESTED...GUARANTEED...FULL-RATED AIR POWER!

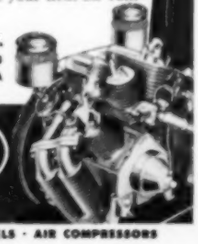
WAYNE
JOB-ENGINEERED COMPRESSORS

You get all you pay for in a Wayne Compressor. Every one is sold on the basis of known efficiency in terms of usable air output—pre-tested and guaranteed. Designed, engineered and built in Wayne plants each compressor is "job-engineered," you are assured of buying guaranteed air output for a specific job.

Wayne Air Compressors are checked for volumetric efficiency, performance and operating tolerances. Inspection standards are high, and units must measure up to rigid requirements. Every working part has been designed for minimum maintenance and low operating cost.

You get every dollar's worth with a Wayne—highest quality, guaranteed air output, nationwide service. Make your next air compressor a Wayne!

THE WAYNE PUMP CO.
SALISBURY • TORONTO
MARYLAND • CANADA

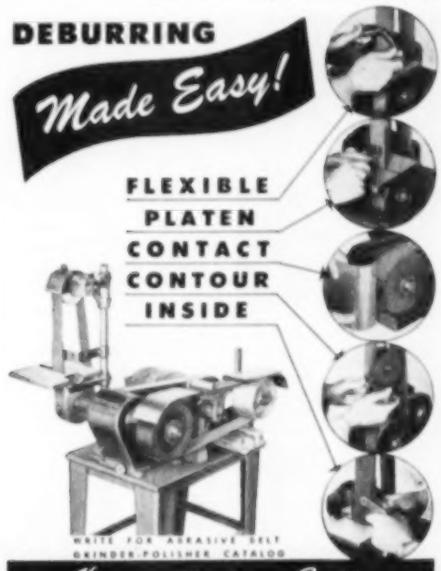


Wayne
NATION WIDE SERVICE

INDUSTRIAL LIFTS • HOSE REELS • AIR COMPRESSORS

If you write maker identify as IEN - 10395

DEBURRING Made Easy!



Hammond Machinery Builders
1607 DOUGLAS AVENUE • KALAMAZOO MICHIGAN

If you write maker identify as IEN - 10396

Chicago MOUNTED Wheels

...now even better with **79E BOND**

Buy Chicago Mounted Wheels—bonded with 79E Bond—and you'll never use any other!

79E—a tough new bond exclusive with Chicago Wheel—is the sensation of the industry . . . it does a BETTER grinding, burring, and finishing job FASTER. A size and shape for every use. Deliveries are excellent—Order today.

CHICAGO WHEEL & Mfg. Co.
Dept. N • 1101 West Monroe Street, Chicago 7

If you write maker identify as IEN - 10397

50 TONS OF POWER ...POSITIONED IN SECONDS!

It's a cinch with the new
HEIN-WERNER model 50.12AA
Hydraulic Jack

No "spotting" drudgery here! Sturdy positioning handles afford firm, secure grip . . . permit easy maneuverability. Handles fall flush against jack housing when not in use. This 50-ton HEIN-WERNER model is ideal for moving heavy machinery, bending pipe, pulling gears and pinions, and similar heavy duty jobs. It is powerful, safe, easy to use. Tandem pump speeds jacking . . . saves effort. See your industrial supply distributor or write us.

Hein-Werner HYDRAULIC JACKS

HEIN-WERNER CORPORATION • WAUKESHA • WISCONSIN

If you write maker identify as IEN - 10398

NEW!

Tester For Pressure of RAM-ON-WORK

For Determining Total Weights or Total Pressure on All Types of Presses

STUDEBAKER TOTAL PRESSURE TESTER

- Accurate reading
- Can be used vertically or horizontally
- Self-contained hydraulic unit
- Accurately calibrated
- Heavy duty construction
- Furnished in permanent instrument case
- Three sizes — 10M — 50M — 100M lbs.

Write for prices.

Studebaker MACHINE COMPANY

1235 S. 9th Avenue • Maywood, Ill.

If you write maker identify as IEN - 10399

Never Before!

. . . SO MUCH POWER PER POUND

MEET the new Rotor Vertical Air Grinders! Never before have you had so much power in vertical air grinders . . . for such light weight! They're well balanced . . . easy on the operator. Here are *new* features to speed up your metal removal. *Write today for Bulletin No. 40.*

AIR O'TOOL

THE ROTOR TOOL CO.
CLEVELAND, OHIO

If you write maker identify as IEN - 10400

The du MONT CORPORATION, Greenfield, Mass.

Please mail folder and price list N on *Minute Man Keyway Broaches and Kits to*

Name _____

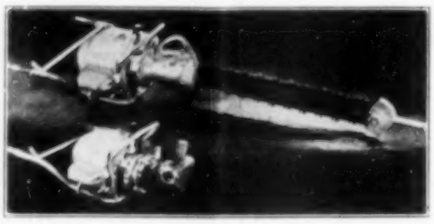
Company _____

Address _____

If you write maker identify as IEN - 10401

PUMP . . Engine driven rotary, weighs 63 lb., 50 gpm. at 125 pounds

Source: KIEKHAEFER CORP.
R 2-A, Dept. P-11, Fond Du Lac, Wis.



Clamps on swivel head

New pump for utility service, as in fire fighting, has been developed by the company for interchangeable application on the engine that it has designed and built to drive a Model DA-211 Disston chain saw. The saw blade and head can be removed and the pump put in its place in less than a minute without modification to the engine assembly. The pump alone weighs 18 pounds. The complete assembly with its carrying handles weighs 63 pounds.

If you write maker identify as IEN - 10402

FURNITURE . . Laboratory equipment with top located 30 in. above floor

Source: FISHER SCIENTIFIC CO.
719 Forbes St., Pittsburgh 19, Pa.

Ask for furniture catalog

An operator can sit comfortably in front of this new 30-in. laboratory furniture. It is 6 in. lower than similar equipment also available from the company. Included is a combination drawer and cabinet unit, an open bench top and the company's recently announced Versa-Table. Any number of these units can be placed in desired combinations. The drawers will hold slides, solution cells, glass filters, analytical weights. The cupboard below the drawer will take instruments such as microscopes, pH meters, pyrometers.

Identify as IEN - 10403

Textile and food-processing plants will have available a new mildew-resistant enamel in the near future. In fact it is available now in limited quantities from Du Pont for processing areas where mildew is a problem. It employs Cuprilate fungicide to destroy and prevent further formation of wall and ceiling mold growth. Test panels have been exposed for eighteen months without a sign of mildew. The enamel has a greenish-yellow cast that is not objectionable.

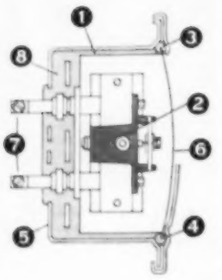
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . *See Page 50*

If you write maker identify as IEN - 10404

Available NOW!

RUGGEDIZED METERS

to meet Sig. C. Spec. MIL-M-10304



8 PLUS Features

Extra "Ruggedized" Features

1. Movement is shock-mounted and housed in rubber-lined case.
2. Movement supported by die-cast plate for strength and accuracy.
3. Glass rubber-grommeted and sealed to rubber lining of case.
4. Non-rigid mounting of glass increases resistance to shock.
5. Each meter designed and built to highest quality standards.

Extra Installation Advantages

6. Slight convexity of glass reduces area of accidental breakage.
7. Terminals tapped and provided with wiring screws to facilitate wiring.
8. Damage to wiring reduced by non-rigid mounting of terminals and flexible conductors.

Building rugged electric meters is not new to SUN . . . For over 20 years the automotive industry has depended on SUN as one of the largest "D'Arsonval-type" meter manufacturers—to produce rugged, tough meters for portable field instruments. SUN "Ruggedized" Meters not only meet Specification MIL-M-10304 (Sig.C.) — but also embody many *plus* features that make installation easier and faster. "Ruggedized" Meter Data Bulletin on request.

SUN *"Ruggedized" Meters are available as D.C. Volt Meters, Ammeters, Milli-ammeters and Micro-ammeters and also may be ordered as rectifier type A.C. instruments.*

SUN ELECTRIC CORPORATION

6357 Avondale Avenue, Chicago 31, Illinois

If you write maker identify as IEN - 10405

GRAVER

FIELD ERECTION IN ALLOYS

Field erection of special steels, stainless, alloys, clads and aluminum requires special techniques and specially trained crews. Graver's experience — as old as the use of alloys — assures successful, long-lasting process equipment.

GRAVER TANK & MFG. CO. INC.

EAST CHICAGO, INDIANA

NEW YORK • CHICAGO • PHILADELPHIA • WASHINGTON
DETROIT • CINCINNATI • CATASAUQUA, PA.
HOUSTON • SAND SPRINGS, OKLA.

If you write maker identify as IEN - 10406

You can salvage Valuable Parts-

—FOR LESS THAN 25¢!

Including Labor, Materials, Burden

Elox Electron Drills* are *production* machines designed for fast removal of broken taps, drills, studs, etc., without harm to thread or wall, sticking or welding. Most units are completely self-contained, easily transported and come ready to plug in. As simple to operate as any drill press, Elox Electron Drills* are an insurance against loss of time, money and materials. Throughout the world, Elox machines salvage millions of dollars of work each year. Check your scrap today. There's an Elox Electron Drill* priced for any industrial requirement. Write today.

ELOX CORPORATION OF MICHIGAN
730 N. Rochester Road
Clawson, Mich.

If you write maker identify as IEN - 10407

USE JOMAC®

INDUSTRIAL WORK GLOVES

For better hand protection, Jomacs will increase production by helping to reduce injuries in your plant. Made of Jomac Cloth—the famous thick, twisted loop pile fabric.

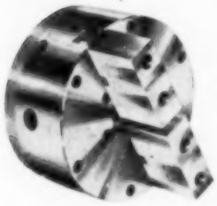
WASHABLE • FLEXIBLE • INTERCHANGEABLE • RESIST CUTTING, PROTECT AGAINST HEAT AND COLD

Write for samples and prices—describe intended use

C. WALKER JONES CO., PHILADELPHIA 38, PA.

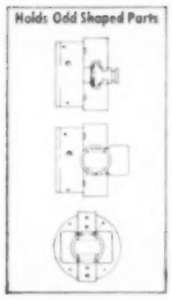
If you write maker identify as IEN - 10408

Buck ADJUST-TRU CHUCKS



NEW 2-JAW AVIATION CHUCK

Holds Odd Shaped Parts



THIS is the slickest way ever devised to hold irregular shaped parts for duplicate machining operations within .0005 precision.

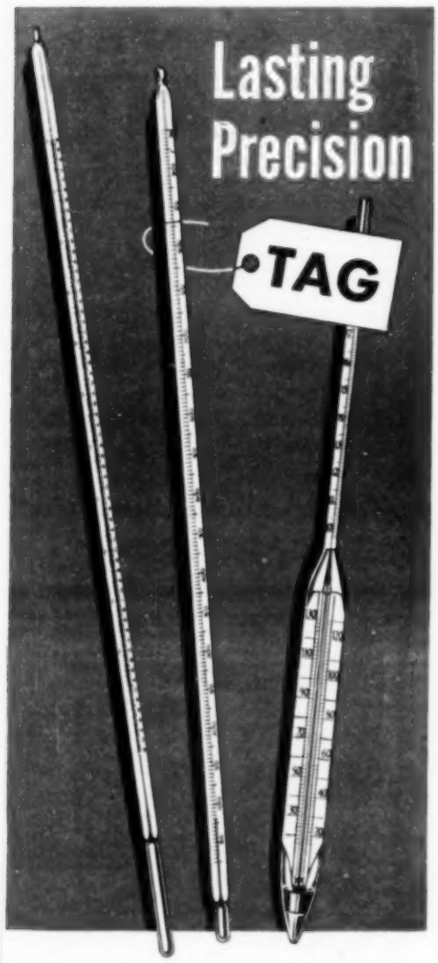
The master jaws have *soft* top jaws which you machine to hold your specific work, then harden if you wish. That's not new. But the way the Adjust-Tru principle saves time on accurate rechucking is truly amazing. The jaws move in and out simultaneously to grip the work with a *single-pinion action*—just like any scroll chuck.

You make but one adjustment for precision when you start your run—then rechuck with scroll chuck speed without further adjustment.

Ask for a catalog with full details.

BUCK TOOL COMPANY
916 Schippers Lane
KALAMAZOO, MICHIGAN

If you write maker identify as IEN - 10409



Favorites the world over because of their readability and permanent accuracy TAG etched stem thermometers are available in A.S.T.M., Extreme Precision, and Standard Grades—as well as in Armored Types for special applications. Also A.P.I. Scale Hydrometers in plain or combined forms, and a precision grade for general use. Catalog gladly sent on request. WESTON Electrical Instrument Corporation, 617 Frelinghuysen Avenue, Newark 5, New Jersey . . . *manufacturers of Weston and TAG Instruments.*

WESTON

WESTON *Instruments*

If you write maker identify as IEN - 10411

NIBBLING . . Portable electric tool rates 14 gage steel, weighs 6 pounds

Source: VICTOR J. KRIEG INC.
51 W. 52nd St., 1st floor, New York 19, N. Y.

Made in Switzerland

Reciprocating head on this new assembly of the Scintilla portable electric tool can be positioned in steps around a complete circle where it locks by trigger action to enable the operator to follow an outline in any direction without having to turn the tool body an unusual amount. The motor is available for operation on 110 or 220 volt ac. or dc. Operation is at 2,300 strokes per minute.

If you write maker identify as IEN - 10412

PRESS TOOLS . . Cutting board for application with steel rule dies

Source: APEX TIRE & RUBBER CO.
503-7 Central Ave., Pawtucket, R. I.

Will not dust chip or age

New combination of rubber and plastic resin is employed in the company's Click-Rite line of cutting boards or pads. They apply on a press or a bench with steel rule dies and cutting tools for materials such as fiber, leather, light metals, plastics, rubber. Elasticity in the board minimizes need for frequent surface dressing.

The composition provides sufficient "give" to maintain sharp cutting edges of the tools as they cut through the material and impress themselves into the board. Sizes range from 12 by 12 to 40 by 38 in. in thickness from ⅛ to 1 inch. The material is resistant to attack by most chemicals and oils.

If you write maker identify as IEN - 10413

CONVEYING . . Switch section for chain conveyor handling cases

Source: CONVEYOR SPECIALTIES CO.
664-68 E. 3rd St., Dept. KP, St. Paul 6, Minn.

Welded steel assembly

Case Diverter is a new switch assembly equipped with a reversible motor driven roller. It assembles in a chain conveyor line handling cases such as those employed in dairy and food processing plants. The motor driven roller is rotated in one direction or the other depending on the branch to which the cases are to be directed for pick-up by the branch chain. The motor is a geared head unit rating ½ hp. It is operated by a reversing drum type switch for location at the operator's position.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10414

WORLD'S FASTEST, SAFEST SCAFFOLDING WACO

ROLLING TOWERS
Speedy and simple for maintenance work!

SECTIONAL SCAFFOLDING
Saves hours in scaffold erection time!

BIG WACO FEATURES!

Only WACO features the original, proven "SPEEDLOCK". Speed, safety and convenience in scaffold assembly.

- Built-in, floating coupling pins
- Built-in ladders
- Pivoted cross-braces
- Heavy duty rubber tire wheels
- Brake-type casters

Phone your local WACO distributor today for a free demonstration. Distributors in all principal U.S. and Canadian cities.

Write for free file folder

SALES-RENTALS WACO

WILSON-ALBRECHT CO., INC.
DEPT. R, 2345 WOODDALE AVE.
MINNEAPOLIS 16, MINN.

If you write maker identify as IEN - 10415

new! revolutionary!
Pilot-Master
AIR CONTROL VALVES
Ingenious Design • Many Applications

New piston-operated poppet design in 2, 3 and 4-way Master and Pilot-Master Valves—also 10 new Pilot Valves for remote control.

ADVANTAGES
- Unique Removable Cartridge
- Fewer Valves to Stock
- Fewer Parts to Stock
- All-Electric or All-Pneumatic Hook-Ups

GET THE FULL STORY

All Sizes ¼" to 1¼"

Every Design Engineer and Tooling Specialist will want Bulletin 251—just off the press. Contains full details on the complete P-M line.

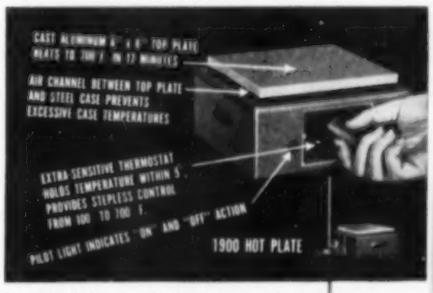
HANNIFIN

Hannifin Corporation • 1107 S. Kilbourn Ave., Chicago 24, Ill.

If you write maker identify as IEN - 10416

VERSATILE, HANDY HOT PLATE

for both exacting requirements and general heating in laboratories and plants.



You'll find this the ideal unit for a wide variety of critical and routine laboratory uses. Wide temperature range, exceptionally close control—less than 5° F variation. Completely variable control over full temperature range. Compact, convenient—plugs into 110 V., 50-60 Cy. Only $19.75. Write for literature and nearest dealer's name.

TEMCO® HOT PLATES & FURNACES

THERMO ELECTRIC MFG. CO., 402 HUFF ST., DUBUQUE, IOWA

If you write maker identify as IEN - 10417

QUICK ANSWERS

TO YOUR QUESTIONS ABOUT STAINLESS TUBING & PIPE!

The Carpenter Stainless Tubing Data Book contains over 90 pages of useful information on subjects such as:

- Corrosion Resistance
- Heat Resistance
- Heat Transfer
- Fabrication
- Sizes & Gauges
- Tolerances
- Special Shapes
- Assembly
- General Physical Properties

For your copy of the Carpenter Stainless Tubing Data Book, send us a note on your company letterhead, indicating your title. Or return the coupon today.

THE CARPENTER STEEL COMPANY
Alloy Tube Division, Union, N. J.

Please send me a copy of the Carpenter Stainless Tubing Data Book.

NAME _____ TITLE _____
(Please Print)
COMPANY _____
ADDRESS _____
CITY _____ ZONE _____ STATE _____
(Firm name and title must be on coupon.)

If you write maker identify as IEN - 10418

...IN THE PRODUCTS YOU BUILD

Manufacturers equip your products with the finest floats available—*Stainless Steel Floats* from Chicago Float Works. Your product can have no better assurance of long trouble-free float performance. You get all of the plus-values of *Stainless Steel* along with Chicago Float Work's more than thirty years of specialized experience in engineering and building floats for industry.

....check these features

CORROSION RESISTANCE. *Stainless Steel* stands up better under severe services in many different kinds of corrosive fluids.

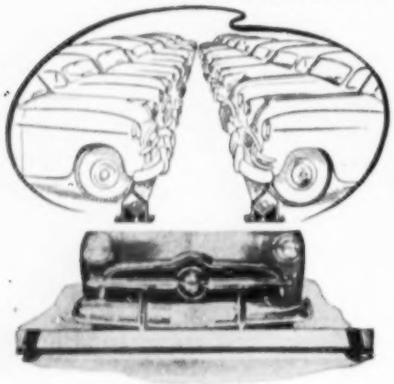
EXTREME STRENGTH. Will withstand pressures up 1000 lbs. Temperatures to 800° F.

LIGHTER. Less weight affords more buoyancy making for more positive float action.

COMPLETE LINE. Diameters 3 to 10 in. Special sizes to order—standard or special float connections. Write for catalog giving sizes, shapes, spud connections, and complete engineering data.

CHICAGO FLOAT WORKS, INC.
2326 S. Western Ave., Chicago 8, Illinois

If you write maker identify as IEN - 10419



SALIENT FEATURES OF HAR-BAR BARRIERS

1. High enough to stop your car.
2. Low enough to clear your bumper guards.
5. Barrier is above ground — no drainage problem.
6. Barrier is above ground — no rotting of wood.
7. Automatically spaces your cars.
8. Follows contour of your ground.
9. Easily installed — just line up and drive the anchor pins.
10. Easily moved — just pull the anchor pins. 100% reusable.
11. Easy to clean under.
12. Easy to maintain.
13. Installed on any kind of surface — black top, cement, macadam, gravel or cinders.
14. It really dresses up your parking lot.
15. You always stop against your tire — no shock.
16. Castings are non-rusting aluminum alloy.

Send us a plot plan of your parking lot—we do the engineering free.

HARRIS-BARRIER, INC. 5407 N. PENNSYLVANIA STREET INDIANAPOLIS 5 • INDIANA

If you write maker identify as IEN - 10420

TO REACH HIGH PLACES SAFELY...

This illustrated folder describes the complete line of Ballymore ladders that are saving time and money and increasing capacity of storage space in business and industry. Send for your free copy today.

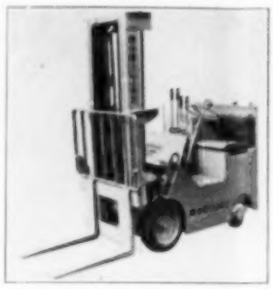
BALLYMORE COMPANY
WAYNE 2, PENNSYLVANIA

Name _____
Company _____
Address _____
City _____ Zone _____ State _____

If you write maker identify as IEN - 10421

TRUCK . . Power lift fork design, engine drive, to 9 mph., 1½ ton load

Source: **MOBILIFT CORP.**
833-37 S.E. Main St., Portland 14, Oregon



Mobil-Spring suspension

The operator rides in seated position with pull-push controls to his right on this new spring cushioned Model-HR engine driven truck. It rates a 1½-ton load and is a new addition to the company's line of engine driven trucks on which the operator rides in standing or seated position. Overall length without the forks is 73 inches. Width is 38 in. and wheel base measures 42 inches. The truck can be turned in 66-in. intersecting aisles.

Three lift heights are 68, 86 and 108 inches with lift speed at 50 fpm. on a capacity load. The lift mechanism tilts 3 deg. forward and 11 deg. to the rear to assist in unloading and in carrying a load safely. Standard fork length is 30 inches.

If you write maker identify as IEN - 10422

PHOTOGRAPHING . . Motion camera records action at group of instruments

Source: **AREMAC ASSOCIATES**
329-E W. Washington St., Pasadena 3, Calif.

For action analysis

Model 1013 is a new 35-mm. motion picture camera employing standard 100-ft. 35-mm. Mitchell film magazines. It mounts a Bausch & Lomb 25-mm. F2.3 coated Baltar lens or its equivalent.

Intended installation is at a group of instruments, as in an airplane for test flight recording, or at an instrument panel in a test set-up or process recording department in a plant. The camera will operate in a temperature range between minus 60 and plus 160 deg. F. It will withstand vibration to 9 G and will operate satisfactorily in altitudes to 60,000 feet.

Operation is on 28-volt dc or 110-volt ac with remote selection of automatic 4, 8 or 16 frames per second. Any frame rate less than 5 frames per second can be pulsed manually or by external means. Exposure rate is constant at 1/50 second.

Identify as IEN - 10423

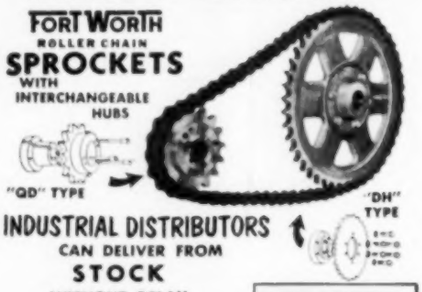
Press one button and out comes cold water. Press another and you get a cup of coffee from a new combination Rudd-Melikian dispenser. The coffee is the company's own product trade named Kwik-Kafe. It is kept refrigerated until the moment it is required. It is delivered hot. A dial selector provides coffee black, with cream, with sugar or with both.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10424

IMMEDIATE DELIVERY WITHOUT REBORING!

FORT WORTH ROLLER CHAIN **SPROCKETS** WITH INTERCHANGEABLE HUBS



INDUSTRIAL DISTRIBUTORS CAN DELIVER FROM STOCK WITHOUT DELAY FOR REBORING

FORT WORTH Sprockets Offer Many Advantages

- Actually Fits Shaft Better
- Reduces Cost of Spares
- Simplifies Changes
- Cuts Replacement Costs

HUBS ALSO FIT TRANSCO V-BELT SHEAVES

CATALOG 300-C
Shows list prices and dimensions of stock QD & DH sprockets. Chain dimensions and drive recommendations are in easy-to-use form.

FORT WORTH STEEL AND MACHINERY CO
Dept. 29, 3600 McCart St., Fort Worth, Texas

If you write maker identify as IEN - 10425

CUT COSTS 3 WAYS:

The blast cleaning production you get over a full month gives a *true* gauge of output. That's when nozzle wear and time losses become apparent—and that's when BORIUM NOZZLES show you amazing returns.

MORE PRODUCTION — Tungsten Carbide liners resist wear and cut-outs. Velocity and cleaning ability stay at peak!

LESS OPERATING COST—Long-lasting orifices conserve air, save compressor wear, cut power bills!

LESS TIME LOST — Frequent nozzle changes avoided. Pattern stays concentrated on target!

300 HOUR GUARANTEE when used with sand and common abrasives . . . usually lasts longer!

FREE CIRCULAR. Send blueprints for quotation on special BORIUM nozzle insert designs.

STOODY COMPANY
11930 E. Slauson Avenue
Whittier, California

If you write maker identify as IEN - 10426

Meco

SEALTITE

Instantaneous Waterproofing Seals Leaks in concrete or other masonry walls without removing hydrostatic pressure.
Ideal for waterproofing concrete block walls above or below grade.

for RESERVOIRS — SUBWAYS — BASEMENTS — DAMS — TUNNELS — PITS

Results or no charge.

Manufactured by

MAINTENANCE ENGINEERING CO.
16 W. Johnson Street • Philadelphia 44, Pennsylvania

The makers of the famous

***Meco* BLACK MAGIC SURFACE SEAL**

for Bituminous Paving

RPE 1442-Pa.

If you write maker identify as IEN - 10427

BONDED
NO NAILS CAN PROTRUDE
NATIONAL PREMIUM PALLET

A NEW Pallet by the Nation's Largest Pallet Manufacturer

An important new advance in a BONDED pallet—kiln-dried before being glued to insure stronger, trouble-free service. No warping, no splitting, countersunk nails cannot protrude to damage bagged goods. Made to your order in all pallet styles, exclusively by NATIONAL PALLET CORPORATION.

Send for complete information and prices.

NATIONAL PALLET CORPORATION
14th FLOOR • OLIVER BLDG. • PITTSBURGH 22, PA.
Representatives in All Principal Cities

If you write maker identify as IEN - 10428

MYSTIK® BRAND TAPES •SELF-STIK

Protecto-Mask®

eliminates costly refinishing!

Highly polished surfaces on aluminum, stainless steel, plastics, glass . . . metals and materials of all kinds . . . *must* be protected from costly scratches, in fabrication, storage, shipment.

Mystik® Brand Protecto-Mask is *self-stik* . . . easily applied directly from the roll for a tough, scuff-resistant "skin". Adheres instantly, yet peels off easily without leaving residue. Can also be used for layout and diagramming.

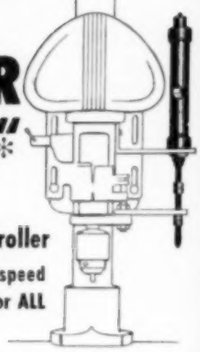
WRITE TODAY for information and samples. Mystik Adhesive Products, 2644 North Kildare Ave., Chicago 39

Trademark Mystik Registered ©Mystik Adhesive Products 1951

If you write maker identify as IEN - 10429

Easy does it!

"POWER CHECK"*



. . . an adjustable Precision Feed Controller

. . . retards the feed speed for ANY PORTION or for ALL of the feed-travel

MAKES EVERY OPERATOR AN "EXPERT"

- Applicable to any feeding mechanism where precision control is desirable.
- Controls the pressure at work surface or at any stage of penetration or approach.
- Increases tool life . . . tools require less frequent sharpening.
- Reduces work rejects . . . insures uniformly clean, high quality work even by the inexperienced.
- Adjustable for from 1 to 1000 lbs. retarding pull. . . . Completely self-contained unit . . . standard unit available in 2", 4", 6" and 8" stroke. Special intermediate strokes obtainable up to 9". . . . Installed by simple bracket mounting . . . actuated by moving element of feed or feed table . . . virtually fool-proof. Inexpensive.

Write for informative bulletin DC-208-A.

NATIONAL PNEUMATIC CO., INC.
125 AMORY STREET, BOSTON 19, MASS.
NEW YORK PHILADELPHIA CHICAGO DETROIT

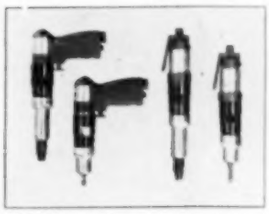
NP "POWER-CHECK" precision FEED CONTROLLER

* Trade Mark

If you write maker identify as IEN - 10431

SCREW DRIVING . . Pneumatic tools for threaded fastenings to ¼ inch

Source: MASTER PNEUMATIC TOOL CO.
752 Master St., Orwell, Ohio



Particularly for a production line

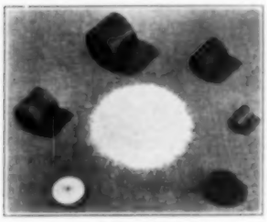
Thirty-six models, 12 for screw driving and 12 for nut setting, are included in a new series of rotary pneumatic tools known as Master Power. Each is designed for non-reversible operation in assembly and sub-assembly work to drive screws and to set nuts and bolts in sizes to ¼ inch. Weights range from a little under 2 to 2½ pounds. Operation is on air pressure at 80 to 100 pounds. Most of the operating parts are interchangeable between the different models in order to minimize repair part stocks.

Three types are equipped with adjustable clutches, positive clutches or direct drive and are available for operation at 580, 1,200 and 2,400 rpm. The adjustable clutch can be set to reach predetermined tightness. It engages when the operator applies pressure on the tool. When tightening resistance exceeds spring tension the drive disengages. The positive clutch contains one set of jaws held apart by a spring until engaged by operator pressure to start driving. This clutch does not disengage but continues to drive until the tool stalls or until the operator relieves axial pressure. The positive drive design starts when the operator starts rotation and continues until the tool stalls or until he releases the air pressure at the end of a screw-driving or nut setting operation.

If you write maker identify as IEN - 10432

PLASTIC . . Powdered nylon presses to form bearings, cams, gears

Source: NATIONAL POLYMER PRODUCTS INC.
Box 422, Reading, Pa.



Powder made by chemical means

Nylasint 66 trade names a new powdered form of Grade FM10801 nylon that is suited for use in manufacture of small parts by a combination of press forming and sintering at a temperature just below the melting point of the plastic. The powder can be mixed with fillers such as lead, copper, graphite, refractory oxides, magnetic powders to produce particular characteristics in the finished piece.

Representative items are bearings, cams, gears, rollers, valve seats. Pressure of about 25 ton per sq. in. is required in the forming operation. Higher pressures, to 50 ton, may be required for large pieces or those of relatively complicated shape. The company is prepared to provide engineering assistance in set up of equipment and in processing operations involving use of the new material.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10433

Its all in the *Heat Treatment*

ORIGINATORS OF THE SUPER SAFE STEEL STAMPS

The "Tough" back to absorb hammer blows without crushing or distorting —The "SOFT" center to cushion the shock — The "HARD" tip to insure cleaner impressions and a longer lasting stamp make the RICK the better safer stamp. These stamps are made in ANY type to fit ANY holder.

WRITE TODAY for ADDITIONAL INFORMATION

We are also manufacturers of—
- Special branding and knurling wheels
- Engraved plastic molds . . .
- Name stamps . . .
- Designs and trade marks . . .
- Embossing dies . . .
- Various Marking Dies and Tools

PITTSBURGH STENCIL and TOOL COMPANY
REEDSDALE and SCOTLAND STREETS
PITTSBURGH 12, PA.

If you write maker identify as IEN - 10434

ENGRAVING • PROFILING

for heavy production

Engravograph TM®

Write for literature describing
1. Heavy Duty model (as illus.)—Catalog H23
2. Portable models—Catalog IM23

NEW HERMES, Inc.
13-19 University Pl. N. Y. 3, N. Y.

If you write maker identify as IEN - 10435

TORCH-O- says:

"I'm trigger controlled for faster, easier soldering—brazing—melting"

Torch-o-matic saves time—saves gas! Just pull the trigger and air-acetylene gas automatically ignites—release trigger and gas shuts off instantly. No hazard from open flame when not in use. One-hand operation with no "time-out" to light up and adjust. Pays for itself many times over in savings and convenience. Three sizes of tubes and nozzles take care of any job. Fits your present equipment. Write for complete details.

DEALERS WANTED: *Some territories still open—act now!*

VELOCITY POWER TOOL COMPANY
7505 Thomas Boulevard • Pittsburgh 8, Pa.

If you write maker identify as IEN - 10436

RECOVERED 3 TIMES IT'S COST IN 2 YEARS' USE.. NO REPAIRS OR REPLACEMENTS *

*Unsolicited statement made by a Michigan User about a Titan Electric Hoist

THE Titan ELECTRIC HOIST

The *Titan* is the powerful, *little* hoist with the *big* hoist features: Improved Worm Drive, Electric Brake, Push-Button Control.

Once tried, it is the preferred small hoist.

Capacities: 250 lbs. to 1 ton; with monorail trolley or upper suspension hook.

Write for Titan Bulletin 801A.

Material handled overhead saves valuable floor space for production.

DETROIT HOIST & MACHINE CO.
8226 Morrow St., Detroit 11, Mich.
Manufacturers Since 1905

If you write maker identify as IEN - 10437

REALOCK FENCE

gives **locked-in** protection

All fittings on Realock Fence have bolts so placed that nuts cannot be removed from the outside. This means that Realock Fence provides *added protection* for your grounds and property . . . effectively discourages tampering by would-be trespassers.

Strongly constructed, Realock Fence has high resistance to the elements because of a special galvanizing process . . . gives permanent protection and trouble-free service year after year. For additional information write our nearest sales office or consult your classified telephone directory.

THE COLORADO FUEL & IRON CORPORATION—Denver, Colorado
THE CALIFORNIA WIRE CLOTH CORPORATION—Oakland, California
WICKWIRE SPENCER STEEL DIVISION—Buffalo, New York

REALOCK FENCE
THE COLORADO FUEL & IRON CORPORATION
CF&I
BRANCHES IN ALL KEY CITIES

If you write maker identify as IEN - 10438

A new tool for cleaning dirty metal surfaces

WEAR-EVER NICKLTEX

Nicklex is a highly flexible precision-made cleaning tool that outlasts ordinary scour cloths and sponges, works easier, and can be washed clean.

For cleaning corks, T's, elbows, coils

Cuts through dirt

Nicklex is made from high nickel alloy flattened wire, diamond drawn, and produced with all the care of a fine machine tool. This special alloy wire, which holds its twist *permanently*, is knitted into a continuous interlocked mesh. It handles easily because it cuts through dirt, doesn't just push or rub it off. And it can be used flat, balled, or like a shoe-shine cloth on cleaning pipes and coils.

Use folded for flat or rounded surfaces

Doesn't splinter—Keeps clean

Nicklex will not splinter, unravel, leave a metallic surface deposit, or harm workers' hands. It's easy to keep clean, too. Just wash in soap and water, steam or solvent. Dirt particles drop through the mesh and Nicklex comes out clean as new. It withstands the most powerful acids and alkalies, is rustproof, and highly corrosion resistant.

It hard-to-get at corners, "ball" the Nicklex

Outlasts anything else

We don't know exactly how long Nicklex will wear in your plant; but we do know it outlasts anything on the market today. In one case on record a Nicklex cloth already has outlasted 144 coiled wire sponges and is still going strong. In another case (a meat packing plant) it proved to be 30 times less expensive because it lasted so long. It will pay you to ask your supply house about Wear-Ever Nicklex. Or mail the coupon today to:

Washes clean—always SANITARY

THE ALUMINUM COOKING UTENSIL COMPANY
6909 Wear-Ever Building · New Kensington, Pa.
(Manufacturers of Wear-Ever Aluminum and Professional Cutlery)

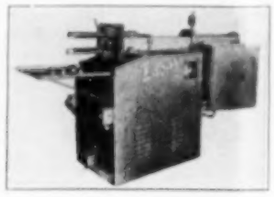
( ) Have your representative show me how Wear-Ever Nicklex is superior to scour cloths and sponges.
( ) Enter our trial order for a case of 12 Nicklex Flex-cloths at $11.40.

NAME
POSITION
Cut out, clip to your letterhead, and mail today

If you write maker identify as IEN - 10440

BROACHING . . Hydraulic machine provides 3 ton pull and 20 in. stroke

Source: **ZAGAR TOOL INC.**
24002 Lakeland Blvd., Cleveland 23, Ohio



Operator's hands are free

Hyspeed 20 is a new broaching machine with maximum feed stroke variable between 2 and 27 fpm., overall stroke length of 20 in. and ability to operate at 700 strokes per hour. The machine is designed particularly for high speed operation on specialized medium and small work to include splines, wrench slots, box wrench openings, hole sizing.

Control centers at a foot pedal for operation from either side of the machine. Two knee operated switches permit stopping the movement instantly. A selector switch on the electric control panel can be set for automatic return or for conventional broaching stroke to stop at the end of each movement. Coolant equipment supplies light or heavy cutting oil in adjustable amount.

If you write maker identify as IEN - 10441

TESTING . . Closed cup apparatus checks liquid flash and fire points

Source: **PRECISION SCIENTIFIC CO.**
3735-39 W. Cortland St., Chicago 47, Ill.

Press cover to flash

Electric plate, temperature adjustable between 100 and 700 deg. F., forms the base of this new Closed Cup Tester. The plate carries a metal collar that supports a water bath in which the standard oil cup is suspended. The oil cup cover is equipped with a flashing mechanism mounting a gas flame tip or an oil wick. Pressing a handle on the cover opens a port and introduces the flash flame into the cup. Two thermometer wells complete the assembly with an extension cord and plug to connect into a 110 volt, ac. line.

Overall dimensions are 4¾ by 8¾ inches. Weight is 3 pounds. The cup is stainless steel and brass. The plate and support collar are steel with baked enamel finish. The apparatus applies on liquids flashing below 175 deg. F.

Identify as IEN - 10442

Electronic control operates with a sound recorder to "observe" little patches of tape placed on the sound film. These patches act through the control to actuate a slide changer so the sound film and the slide action will be synchronized. Any tape recorder and most 16 or 35-mm. or 2 by 2-in. slide equipment can be adapted for the automatic operation. Synchromatic Products developed the new equipment.

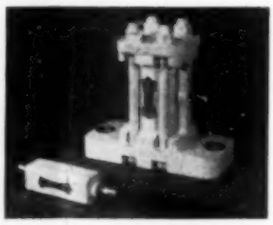
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 56

If you write maker identify as IEN - 10443

A PAID NEWS ADVERTISEMENT BY CLEVELAND VIBRATOR COMPANY

AIR-CUSHIONED VIBRATOR

Moves, Settles, Packages Materials QUIETLY



The CLEVELAND Air-Cushioned Vibrator, latest in its line of quality air vibration equipment, is being used to keep a wide range of materials moving quietly through, into or out of bins, hoppers, chutes and other material handling devices.

It is compact, carefully engineered and ideally suited for applications where noise is objectionable.

Basically, reciprocating action of the hard chrome-plated piston develops the vibrating action. Momentum set up by the piston is cushioned by an air pocket at each end of the vibrator assembly. This CLEVELAND unit is made in five different piston diameter sizes from 1" to 3".

What are you handling in bins? . . . cinders, powdered soap, candy bars, cement, coal, meat, sand, salt, paint, chemicals, breakfast food? All of these and countless more are flowing, packaging, settling QUIETLY with this CLEVELAND Air-Cushioned Vibrator. Completely eliminates arching, sticking and bridging. Easily installed. Priced as low as $14.25.

BIN STUCK LATELY? Catalog No. 108 on request.

Made by Cleveland Vibrator Co., 2736 Clinton Avenue, Cleveland 13, Ohio.

If you write maker identify as IEN - 10444

HOBBS
EST. 1882
TANGLE-PROOF
LOCK WASHERS

You can *depend* on Hobbs spring lock washers to meet all job requirements and government specifications. Available in high carbon steel, stainless steels, silicon and phosphor bronze, and all types of platings.

HOBBS COTTER PINS are available in steel, brass, stainless steel, and monel in extended prong (Loxit) and hammer-lock (HobLok) types. HobLok cotter pins lock themselves when hit with hammer!

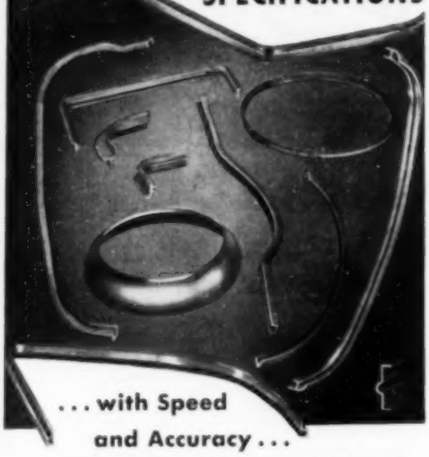
Write now for Hobbs lock washer and cotter pin price lists!

HOBBS MANUFACTURING CO.
EST. 1882
Fastener Division
40 SALISBURY ST., WORCESTER 5, MASS.

If you write maker identify as IEN - 10445

STRETCH and COMPRESSION

CONTOUR FORMED PARTS to your SPECIFICATIONS



. . . with Speed and Accuracy . . .

no buckling of horizontal flanges

ECONOMY is one of the many advantages that make Contour Forming an important factor in the construction of aircraft, jet engines, guided missiles, railroad coaches, trucks, buses, etc. Single or compound curves, true, full circles or segments, shallow bends or short radius curves can be formed in most metals, including 95% titanium. Many manufacturers have profited by using our highly experienced Forming Division as an extension of their own production facilities. Send us a print and quantity requirements of some of your needed parts and we will quote on them.

Our new 32-page catalog CF-352 is just off the press and your copy is waiting for you. Send for it.

THE CYRIL **BATH** COMPANY
Manufacturers of Metal Forming Machinery
6935 MACHINERY AVENUE • CLEVELAND 3, OHIO

If you write maker identify as IEN - 10447

TEFLON TAPES

C-D-F takes duPont's Teflon and processes it into insulating tapes with exceptional resistance to moisture, arcing, and high heat. Available in unsupported or glass fibre fabric base; wide range of thicknesses and widths. For the best in tapes of Teflon, buy from C-D-F!

TEFLON SHEETS

C-D-F makes news with Teflon. A variety of Teflon glass base laminates are available with copper foil surfaces, suitable for etching of printed circuits. Exceptionally good bond strength, high heat resistance, low and stable dielectric loss properties. C-D-F glass supported or unsupported sheets may be formed for channel blanks or armature and field coil insulation.

WRITE NOW! C-D-F offers a valuable technical folder on Teflon, complete with samples, sizes, specifications, applications. If your work involves insulating materials . . . you need this information from C-D-F.

Continental-Diamond Fibre Company
NEWARK 21, DELAWARE

If you write maker identify as IEN - 10448

VISIBILITY
ACCESSIBILITY
COMPACTNESS

R-B-M
AC MAGNETIC STARTERS

The R-B-M melamine arc chamber extinguishes the arc of loads far in excess of maximum ratings, without impairing the accessibility of the stationary and movable contact assemblies.

A quick glance immediately shows which overload has tripped.

R-B-M puts more usable contact material at the center of arcing to provide greater wear before replacement.

Magnet and coil assembly, as well as stationary and movable contacts, can be removed independently of other components by using only a screwdriver and without disconnecting external wiring.

Write Dept. L-9 for Bulletin 605

R-B-M DIVISION
ESSEX WIRE CORP.
Logansport, Indiana
MANUAL AND MAGNETIC ELECTRIC CONTROLS FOR AUTOMOTIVE, INDUSTRIAL, COMMUNICATION AND ELECTRONIC USE

If you write maker identify as IEN - 10450

COMMUNICATING . . Two way radio for local use in industrial areas

Source: RADIO CORP. OF AMERICA
1941 Frost & Cooper Sts., Camden 2, N. J.

"To call all cars"

New assembly of 60-watt transmitter and selective adjacent-channel receiver, including operating controls and a power supply, have been developed by the company to serve as a headquarters radio station for its mobile Carfone equipment, previously described IEN 3589-49. The new unit transmits on three frequencies in the 152 to 174 mc. band. It receives on two frequencies to provide for multi-channel operation. It is suited also to coordinate several different communications installations in a single network.

The equipment is enclosed in a steel cabinet measuring 22 by 20 by 11 inches. Operation is on 110-volt 60-cycle ac. with input at 135 watts on standby and 430 watts when transmitting. Major metering circuits of the transmitter and receiver are connected to two 11-pin sockets to assist in servicing. These sockets provide means to check the circuits with a standard metering kit or with the company's Volt-Ohmyst meter. A dynamic or a carbon microphone can be used.

If you write maker identify as IEN - 10451

CUTTING . . Slitting equipment for strip steel, 0.001 to 0.125 inch

Source: HERR ENGINEERING CO.
1954 Griswold St. Ext., Warren, Ohio

Rheostats control dc. motors

Variable speed drive with "dancer" control and provision for quick adjustment by means of cranks and handwheels characterize this new steel slitting equipment. It consists of a roll type slitting machine with breaker rolls on the feed side to remove scale and smooth the material which is fed from a pay-off reel. The slitted material rides through a wiper stand to an adjustable coiling reel.

The machine will handle steel strip ranging from 0.001 to 0.125 in. in thickness. It is available for specified material width. Dancer control mechanisms are employed on the slack loops between the reels and the machine. Scrap that is cut from the two sides of the strip can be handled by a scrap winder, chopper or baller as specified.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10452

Sure, BOSTON REDUCTORS Cost More

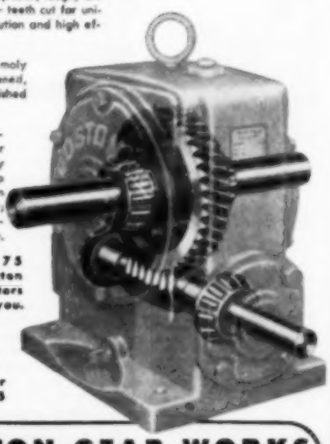
LOOK WHAT YOU GET

worm gear of special, tough, low friction bronze — teeth cut for uniform load distribution and high efficiency.

worm of chrome moly steel with hardened, ground and polished threads.

housing of genuine Boston Gear iron, accurately machined to keep worm and gear in perfect alignment, heavy, solid, precision milled base.

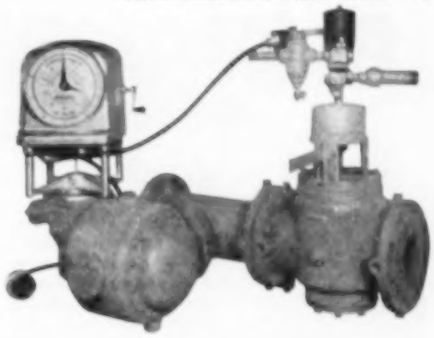
Stocked by 75 Authorized Boston Gear Distributors — one near you.



WRITE FOR FREE COPY of Boston Gear Catalog No. 55

BOSTON GEAR WORKS
63 HAYWARD ST., QUINCY 71, MASS.

If you write maker identify as IEN - 10453



Jacketed Metering Systems
for automatic batching of viscous materials

The Fluidometer System is available either jacketed or unjacketed. A jacketed Fluidometer system will handle heavy, hot, sticky materials as easily, as safely and as accurately as the unjacketed Fluidometer handles light, easy running liquids.

Fluidometer's accuracy and dependability have been proved in years of service under widely varying conditions. Anything that can be handled through a meter can be automatically batched by Fluidometer.

Write for Bulletin FL-49.

HETHERINGTON & BERNER INC.
725 Kentucky Avenue Indianapolis 7, Indiana

If you write maker identify as IEN - 10454

Graybar "AMAZON BRAND"
RUBBER AND FRICTION TAPES

These top-quality tapes meet the most exacting job requirements

AMAZON FRICTION TAPE — Constant production line inspections guarantee the high quality and extreme uniformity of Graybar's Amazon friction tape. The special, long-fibred rubber compound virtually eliminates pinholes and affords superior adhesion. Meeting A.S.T.M. and Government specifications, Amazon tape is supplied in standard #8 rolls, 82½' in length.

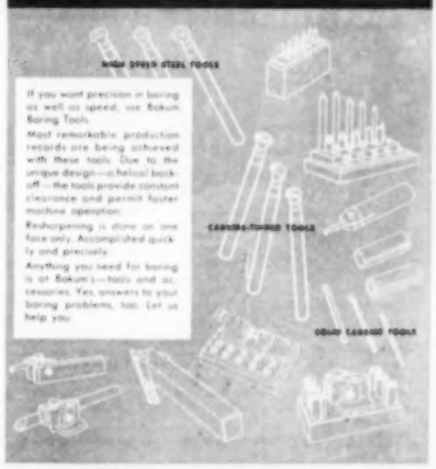
AMAZON RUBBER TAPE — Designed for the severest kind of service, Graybar's Amazon rubber tape meets both A.S.T.M. and Navy Specifications. Made of purest plantation rubber, it is extremely elastic and amalgamates readily into a solid water-tight joint. It withstands a dielectric test of 350 volts per mil of thickness.

For complete information on Graybar Amazon tapes check with your local Graybar Representative. Graybar Electric Co., Inc. *Executive Offices: Graybar Building, 420 Lexington Avenue, New York 17, N. Y.*

Call Graybar *first* for . . . Everything Electrical GraybaR

If you write maker identify as IEN - 10455

HERE'S EVERYTHING FOR
PRECISION BORING and INTERNAL THREADING



BOKUM TOOL CO.
(SINGLE POINT BORING TOOLS)—(INTERNAL THREADING, BOTTOMING AND FACING TOOLS)—(CARBIDE TIPPED TOOLS)
DEPT N. • 14775 WILDEMERE AVE. • DETROIT 21, MICH.

If you write maker identify as IEN - 10456

PLATEGRIP

PLATE FASTENERS FOR CONVEYOR BELTS

Make strong dust-tight, water-tight joints in belts of any width. Special design spreads tension uniformly across belt, allow natural troughing of belt and assures smooth operation over flat, crowned or take-up pulleys. Sizes for belts of from 1/4" to 1 1/2" thickness. *Write for Catalog Sheet.*

ARMSTRONG BRAY & CO.
5360 Northwest Highway • CHICAGO 30, U.S.A.

If you write maker identify as IEN - 10459

TESTING . . Fog spray cabinet to check metals and metal coatings

Source: SINGLETON CO.
10514-18 Western Ave., Cleveland 11, Ohio

You can watch it work

Transparent lucite in fusion welded assembly forms the housing, interior reservoirs and gutter equipped lid of this new fog type salt spray test cabinet. It measures 36 by 24 by 36 in. inside and is equipped with a lid measuring 38½ by 27¼ by 3 in. with a water seal trough 2 in. in width surrounding the outside. An atomizer nozzle is located 8 in. from the bottom together with a Glorod electric heating element. At the bottom is a solution reservoir 7 in. in depth and a drain reservoir measuring 6 inches. Two specimen supports, two fog collectors and stands, a thermostat adjustable between 60 and 100 deg. F. and a steel stand are included. Weight is about 160 pounds.

The lucite permits the operator to observe progress of the test and features light weight in comparison to metal equipment. It also is a good insulator to maintain desired operating temperature. Required connections are to a plant air line for the atomizer and to a 110 volt line for the heater.

If you write maker identify as IEN - 10463

QUICK ACTING
Saves Time At Every Operation

EVERLASTING Valves give you the quick action you need in many valve services. They open and close with less than a quarter turn of the operating lever . . . and the operation is easy because of the ample leverage.

And that's only one of the many advantages of the unique EVERLASTING design . . . proven by more than 40 years on the market. Its drop-tight seal is kept leak-proof because of the self-lapping action of the disc rotating over the seat each time the valve is opened or closed . . . its straight-through flow minimizes pressure loss through the valve . . . its non-wedging action prevents sticking . . . and it requires no lubrication.

With all these advantages, you have an "everlasting," ever-tight, ever-satisfactory valve that is literally unequalled for many services on process lines, emergency shut-offs, equipment outlets, boiler blow-off, fire protection, etc., and suitable for practically all fluids.

Write for descriptive bulletin

Trade Mark "EVERLASTING" Reg. U. S. Pat. Off.

EVERLASTING VALVE CO., 49 Fisk St., Jersey City 5, N. J.

Everlasting Valves

for everlasting protection

If you write maker identify as IEN - 10460

TRUCK . . Engine drive fork lift, free lift height to 92 or 116 inches

Source: HYSTER CO.
2616 N. E. Clackamas St., Portland 8, Oregon

Uprights stay down

The company announces availability of its engine driven fork lift truck in a Model 20 with new free-lift uprights. The design is for spaces where overhead clearance is restricted or where the inner upright of a standard model would strike an obstruction before a load could be elevated to a desired stacking height.

Typical applications include loading and unloading box cars and trucks, working under low doorways and balconies. Two free-lift heights are 92 and 116 inches. They are available on the company's trucks with specified load carrying capacity.

identify as IEN - 10461

Carborundum Co. is pleased with its installation of Industrial Nucleonics radio-active electronic control for processing its abrasive coated products. Precision control can now be maintained over thickness and density of the adhesive and also the abrasive to within one per cent without stopping the equipment which operates at speeds to 250 ft. per minute. The control is basically the same as described IEN-1175-52.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10457

For 30 years, we have been working with all kinds of metals . . . making all sizes and types of crankshafts, eccentric shafts, and drive shafts to precise and exacting specifications. Our manufacturing skill, combined with our experience, produces shafts of absolute fit—eliminates reworks and rejects.

If you use shafts in your product, regardless of your requirements, you can look to us as a dependable source of supply. Send us your specifications today. We will contact you promptly.

YORK *Electric & Machine Co., Inc.*
YORK, PA.

Makers of BILTWELL•FOREMAN *Axle Shafts for the automotive industry . . . with world wide distribution.*

"WHERE PRIDE OF PRODUCT PREVAILS"

If you write maker identify as IEN - 10464

MARKED in Aluminum Ink*

—ideal for dark metallic surfaces

Marking steel drums, tools, parts, pipes, etc. is smooth sailing with the Flo-master Felt-Tip Marker. It marks on any surface—glass, wood, plastic, etc.

*The complete range of ten colors in Flo-master Inks permits speedy and accurate identification for assembling, stocking, inspecting.

Flo-Master semi-opaque inks—waterproof, non-smudging, fast-drying—are recommended for hard-to-mark surfaces using the KING SIZE Flo-master (illustrated). For general purpose marking—cartons, cases, etc.—use Transparent Inks with POCKET SIZE Flo-master.

Contact your supplier or write direct to–
Cushman & Denison Manufacturing Co.,
153 West 23rd Street, New York 11.

Flo-master
FELT-TIP MARKER

If you write maker identify as IEN - 10458

GET THIS FREE BOOK OF FACTS ABOUT GLASS

Saves time in designing and specifying, suggests economical ways of using flat glass in place of other scarce, expensive materials.

Complete specifications, including thicknesses, sizes, weights and physical characteristics of all types of flat glass are tabulated in this condensed, easy-to-read booklet. The information it contains is ideal for users, designers and buyers of glass for all types of industrial applications—sheet glass, polished plate glass, *Electrapane** (electrical conducting glass), *Thermopane** insulating glass, *Tuf-flex** tempered plate glass, safety glass and *Vitrolite** opaque colored glass.

Write for your copy—ask for bulletin SPD—51

LOF GLASS
LIBBEY·OWENS·FORD GLASS COMPANY
9292 NICHOLAS BLDG.
TOLEDO 3, OHIO

If you write maker identify as IEN - 10462

it's fast . . . you get instant, precise readings directly from scale face . . . no need for reference charts or calculations. Measure air flow through ducts, grilles, motors, spray booths, etc., or in the open.

it's accurate . . . brings laboratory standards of air velocity measurement to the production line, mine, mill . . . anywhere. Needs no special care or handling . . . anyone can use it and get accurate results.

it's portable . . . completely self-contained, hand-held. Rugged construction and sturdy case protect the Velometer from usual hazards of portable use. Available in scale ranges to 24,000 f.p.m. Wide selection of jets and fittings assures adaptability of Alnor Velometer to your application. Get full details and prices, write for Bulletin 2448-G. Illinois Testing Laboratories, Inc., Rm. 517, 420 N. La Salle St., Chicago 10, Ill.

Alnor PRECISION INSTRUMENTS FOR EVERY INDUSTRY

If you write maker identify as IEN - 10465

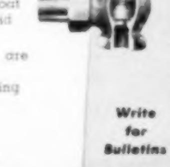
ILLINOIS
STEAM SPECIALTIES

Replace Obsolete Steam-Wasting Units With Illinois Specialties

Equip your radiators with smooth-acting Illinois Supply Valves and sensitive, steam tight Illinois Thermo Traps.

Improve system operation by replacing thermostatic drip traps with Illinois Float and Thermostatic Traps wherever rapid elimination of condensate is essential.

Illinois Float and Thermostatic Traps are made in three Series to meet a wide variety of applications and for operating ranges from 50 pounds pressure to 25 inches vacuum.



Write for Bulletins

Investigate! Compare!
Try Illinois Traps on your worst service and be guided by results!

ILLINOIS ENGINEERING COMPANY
INCORPORATED 1900
RACINE AVENUE AT 21ST STREET • CHICAGO 8

If you write maker identify as IEN - 10466

ONLY DIMENSIONAIR Gives You ALL This-

FULL 7½" SCALE OF CALIBRATED ACCURACY — All of it measures accurately. Not just part of it!

LONGER APPROACH RANGE to measure earlier BEFORE reaching minimum work size. Total minus range .0015".

GREATER CLEARANCE (.0018" up to .0038") so you can check Undersize, Taper, Out-of-Round and Irregular Shape Holes.

STAY-PUT ZERO — DON'T WORRY ABOUT PRESSURE FLUCTUATIONS.

10 SECOND SET-UP — JUST ONE ADJUSTMENT.

ONE MASTER ONLY — FORGET THE IDEA TWO ARE NEEDED.

INTERCHANGEABLE PLUGS — WITHOUT MAJOR ADJUSTMENT.

MORE SENSITIVE TO SIZE VARIATIONS — fully Jeweled Cushioned Movement.

LONGER PLUG WEAR saves you real money.

Try the Federal Dimensionair yourself — compare it with any other air gage. Write today for complete information and prices. FEDERAL PRODUCTS CORPORATION, 1299 Eddy St., Providence 1, Rhode Island.

FEDERAL

Largest manufacturer of indicating type gages . . . exclusively.

If you write maker identify as IEN - 10467

Why Good Mechanics Demand RIGID New No. 40 TRISTAND Pipe Vises

Tray available for Tristands in service

Handy tray keeps your tools at your fingertips

★ Tristand is really a portable workbench with a vise—roomy top tray has pipe benders and pipe rest; tool tray below keeps tools handy.

★ That tool tray also makes Tristand extra rigid—won't fold up in use.

★ LonGrip tool-steel vise jaws won't slip, are easy on polished pipe or tubing.

★ No. 40 yoke vise Tristand is 2½" capacity, No. 45 chain vise 4"—buy these work-saver RIGIDs at your Supply House!

THE RIDGE TOOL COMPANY • ELYRIA, OHIO

RIGID Work-Saver Pipe Tools

If you write maker identify as IEN - 10469

ADHESIVE . . Thermo-setting film, strip rolls for metal, plastic, wood

Source: MINNESOTA MINING & MFG. CO. 902 Fauquier St., St. Paul 6, Minn.

Small sample on request

Number 588 is a new film in the company's line of Scotch-Weld adhesives, previously described IEN-1959-48. The new material measures 0.005 in. in thickness. It is available in widths from ¼ to 20 in. in 72 yd. rolls. A piece is taken from the roll, separated from its insulating backing and is applied between two mating surfaces. This is followed by pressure at 25 to 50 lb. per sq. in. and temperature from 300 to 350 deg. F. for a curing period of 1 to 20 minutes. A test bond on aluminum to aluminum produced a shear strength to 3,200 lb. per square inch.

If you write maker identify as IEN - 10470

FLOORS . . Surfacing material, resistant to acids, chemicals, oils

Source: UNITED LABORATORIES INC. 16803 Euclid Ave., Cleveland 12, Ohio

Good in plating and pickling rooms

Latex O-Crete is a new floor surfacing material that is troweled to a thickness of about ¼ in. over a clean existing base of concrete, wood, steel and certain other materials. Primary requirements are that the surface be clean and solid.

The material is shipped in two containers, one a liquid synthetic emulsion, the other dry aggregates. The two are mixed on the job and then are troweled in place. The resulting surface will stand up under truck traffic and is resistant to attack by acids other than hydrofluoric and glacial acetic.

If you write maker identify as IEN - 10471

CONNECTOR . . Parts kit for repair of welding and power cable

Source: GAS ARC SUPPLY 221-25 N. 16th St., Philadelphia 2, Pa.

In steel compartments

New assembly in the company's Fast Fix line of repair parts kits contains the necessary tools and replacement parts to put new lugs on No. 14 to No. 6 power cable and to splice and put new lugs on No. 6 to No. 4/0 welding or ground cable. Rubber sleeves and friction tape are included. A Tweco lug-set block and punch permit installing solder type lugs and splicers mechanically. The kit is contained in a steel box with instructions.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10472

AERO-SEAL WORM-DRIVE HOSE CLAMPS WON'T SHAKE LOOSE!

Use of Stainless Steel Subject to Government Regulations.

Wherever you have to clamp a hose connection tight . . . or wherever you want to lock two objects of any shape together in an unshakeable bond . . . your best bet is AERO-SEAL.

Threads of steel worm engage deep into slots in stainless steel band—hold tight under extreme vibration in automotive, aircraft and industrial applications. CAN'T SHAKE LOOSE.

One-Hand Installation

Install on Aero-Seal any place you can reach with thumb and one finger. Self-feeding when band engages worm threads. Thumb-grip and screwdriver types.

Re-use Again and Again

When hose is worn you RE-USE the same Aero-Seal again and again. RE-USE Aero-Seals on temporary clamping jobs—they conform to any shape without damaging band.

"Aero-Seal" WORM DRIVE HOSE CLAMPS

ANOTHER BREEZE PRODUCT

BREEZE CORPORATIONS, INC. 41 South Sixth St. Newark, N. J.

If you write maker identify as IEN - 10473

FOR YOUR TOUGHEST JOBS NEW OTC

30 TON POWER-TWIN Hydraulic Puller

BIG BROTHER TO THE FAMOUS 17½ TON POWER-TWIN

Dynamite . . . the tough 30 ton OTC Power-Twin Hydraulic Puller . . . saves hours and dollars on every overhaul job. Light . . . compact . . . safe remote control. Gives 30 tons of power with only 100 pounds of pump pressure. Complete Hydraulic Puller sets for both 30 ton and 17½ ton Power-Twin.

WORKS WONDERS

Power-Twin pulls or installs bearings, gears, pinions, shafts, studs, wheels, pulleys . . . also performs as a heavy jack, straightener or compressor.

See your jobber for complete information or write us.

OWATONNA TOOL COMPANY

371 CEDAR STREET • OWATONNA, MINNESOTA

If you write maker identify as IEN - 10474

AMAZINGLY COMPACT GEARING!

The most frequently cited reason for specifying Cone-Drive gears and speed reducers is "their amazing compactness."

The reason why Cone-Drive gears are so compact is that they are 'double-enveloping'. They thus have more teeth in continuous contact and load per tooth is distributed more evenly over each tooth face.

As a result, smaller gears—up to ⅓ smaller center distances—can be used to carry the loads when Cone-Drive gears are specified.

If space saving is one of your design objectives, it will pay you to look into Cone-Drive gears and reducers . . . NOW.

They can be a big help to you and they are available in a wide range of standard sizes and ratios.

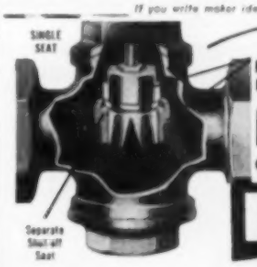
CONE-DRIVE GEARS

Double Enveloping Gear Sets & Speed Reducers

Davison Michigan Tool Company

7071 E. Nevada Road • Detroit 13, Michigan

If you write maker identify as IEN - 10475



Easily Renewable Plug and Seat

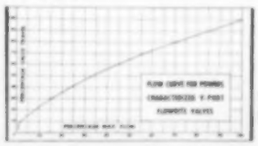
POWERS CHARACTERIZED V-PORT FLOWRITE VALVE

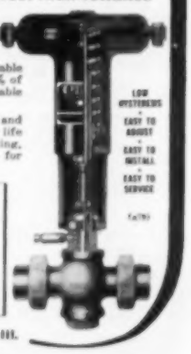
Gives Better Control with Less Maintenance

SPECIAL FLOW CHARACTERISTICS—High lift V-Port plug provides proportional flow throughout entire lift of stem as shown in chart below.

WIDE VARIETY OF SIZES—½" valve available with plugs to give 15%, 30%, 60% or 100% of maximum capacity. Easily interchangeable without removing valve from line.

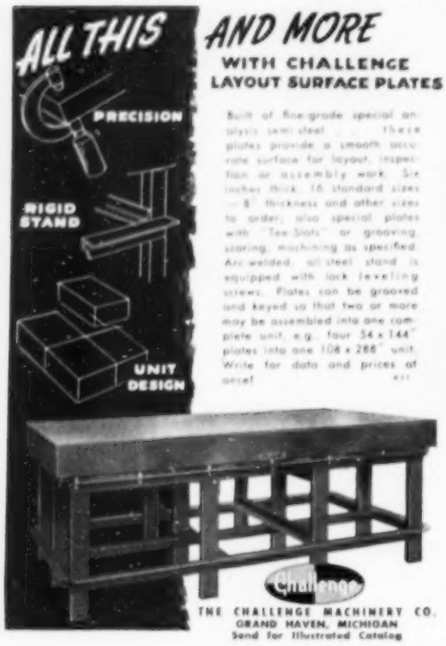
SUPERIOR DESIGN of stainless steel plug and seat reduces wire drawing, insures longer life and tight shut-off. V-Ports do the throttling, protecting separate shut-off seat. Write for circular (a70).





THE POWERS REGULATOR CO., Skokie, Ill.

If you write maker identify as IEN - 10476



AND MORE

WITH CHALLENGE LAYOUT SURFACE PLATES

Built of fine-grade special analysis semi-steel . . . these plates provide a smooth accurate surface for layout, inspection or assembly work. Six inches thick. 16 standard sizes — 8" thickness and other sizes to order; also special plates with "Tee-Slots" or grooving, scoring, machining as specified. Arc welded, all steel stand is equipped with jack levelling screws. Plates can be grooved and keyed so that two or more may be assembled into one complete unit, e.g., four 54 x 144" plates into one 108 x 288" unit. Write for data and prices at once!

THE CHALLENGE MACHINERY CO.
GRAND HAVEN, MICHIGAN
Send for Illustrated Catalog

If you write maker identify as IEN - 10477

If you write maker identify as IEN - 10478

Your saw operator's production jumps 25 to 40% when the saw he uses is sharpened on a new Model 51 Foley Automatic Saw Filer. His saw will cut faster, smoother, run cooler and stay *sharp longer*.

Prove it by 30 Day Trial in Your Own Shop

Try the Foley Automatic Saw Filer for 30 days in your own shop. You'll be under no obligation. See how it sharpens your hand saws, band saws up to 2" wide and cross-cut circular saws 5" to 24" in diameter. Notice how the Foley Automatic Saw Filer automatically corrects uneven teeth caused by poor filing and restores them to even size, shape and spacing. You'll say the Foley Automatic Saw Filer is a "must" for every well run woodworking plant.

FREE BOOK TELLS HOW — The instruction book that goes with every Foley Automatic Saw Filer is yours for the asking. Here you can read how inaccuracies are eliminated through simple and positive adjustments. This book does a double job — helps you cut production costs with better cutting saws and shows you how to lower your saw maintenance costs.

FOLEY MFG. CO.
3500 N. E. 5th St., Minneapolis 18, Minn.
Please send instruction book and information on 30-day trial offer.
Name .....
Address .....

If you write maker identify as IEN - 10479

TRUCK . . Fifth wheel attachment enables fork truck to spot trailers

Source: CLARK EQUIPMENT CO.
Battle Creek 49, Mich.

Trailer can swivel

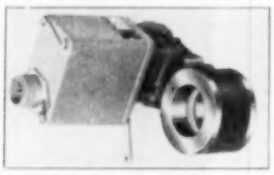
A cross member with a 3-in. center hole slips over the forks of a 3 to 5-ton fork truck and is secured in place by a chain. The center hole provides a means to engage the fifth-wheel pin under a motor vehicle semi-trailer so the trailer can be moved to spot it at a loading platform in the absence of the regular automotive tractor.

The fork truck operator drives up to the end of the trailer until the engaging plate is under the pin. Then he lifts the forks to engage the pin and raise the trailer from its parking wheels so it can be moved about.

If you write maker identify as IEN - 10480

VALVE . . Motor operated gate for aircraft use, range of sizes

Source: HYDRO-AIRE INC.
3002 Winona Ave., Burbank, Calif.



Flow in either direction

A motor operates this new gate valve for shut-off service in lines handling gasoline, engine oil, hydraulic oil, alcohol, water, air or gas. It will open or close the valve with line pressure at 65 pounds in a temperature range between minus 65 and plus 165 deg. F. Flow can be in either direction.

A feature in the valve construction is the use of Teflon in the place of rubber or synthetic rubber at the packing points. All seals are spring loaded. Limit switches make it impossible for the valve to stop in mid-position.

The design also provides for manual over-ride which bypasses the motor and gears and requires operating torque equivalent to a manually operated valve of equal size and operating pressure in the application.

Identify as IEN - 10481

Ceiling hung coils totaling about 75 miles of wrought iron pipe carry hot water to heat a 700 by 1,200-ft. building for Buick Motors. The coils are employed in the place of unit heaters to prevent undue air circulation of coolant mist and dust that would insulate and help destroy the heating value of the unit-heater coils. A. M. Byers, the wrought iron pipe maker, told us about the installation.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10482

TRAFFIC NEVER STOPS

when you repair your floors with

PERMA Mix

FOR PATCHING IN TEMPERATURES FROM 10° TO 100° ABOVE ZERO

3 EASY STEPS TO FOLLOW:

- **Clean area to be patched. Apply primer supplied in drum. Prime about 2" outside of patch.**
- **Fill area with PERMAMIX, just as it comes from the package, allowing sufficient material for slight crown.**
- **Tamp solidly in place and resume traffic immediately.**

No mixing, waiting or production delays when you repair your floors the easy, fast PERMAMIX way. Comes in handy, durable 50 lb. net weight drums.

ALSO AVAILABLE! The new PERMAMIX-C for patching in low temperatures from 5° above zero to -30° below... using the same 3 easy steps.

PERMAMIX CORPORATION
230 N. LaSalle St. • Chicago 1, Illinois

If you write maker identify as IEN - 10483

Hardness Readings in 2 seconds!

Webster

PORTABLE

Hardness Testers

FOR NON-FERROUS METALS

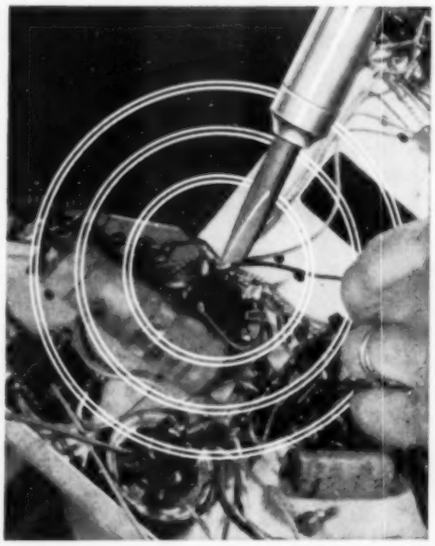
Two low-cost models differing in sensitivity for rapidly testing hardness of aluminum, brass, copper, etc. No training required; one hand operation. Hardness readings in 2 seconds anywhere in shop. Can be correlated to standard hardness scales. Quick reading dial. Special anvil design tests all shapes: sheets, extrusions, tubing, strip stock. Capacity ¼". Simple, rugged design, easy maintenance.

MODEL B Direct hardness readings on all aluminum alloys.

MODEL B-7S Direct hardness readings on copper, brass, etc.

WEBSTER INSTRUMENT Inc. DEPT. N. 11856 Mississippi Ave. LOS ANGELES 25, CALIFORNIA

If you write maker identify as IEN - 10484



You can't beat a soldered connection

for electrical conductivity and permanence!

SOLDERED connections eliminate loss of current, fire hazard, radio interference and excess heat which result from loose, corroded, arcing NON-SOLDERED connections.

For over 50 years experts have specified American Beauty Electric Soldering Irons. They know American Beauty Irons are built to LAST LONGER, OPERATE DEPENDABLY and BE SERVICED QUICKLY.

Build better with solder . . . Solder better with

American Beauty

SOLDERING IRONS

WRITE FOR FREE LITERATURE

Dependable • Durable • Efficient

SINCE 1894

AMERICAN ELECTRICAL HEATER COMPANY
DETROIT 2, MICHIGAN A-103

If you write maker identify as IEN - 10486

ROUGH AND TOUGH FOR LONG SERVICE LIFE

NEW SURETY TRIPL-PALM GLOVES

"TRIPL-PALM CONSTRUCTION"
Where Punishment is Roughest

These new rough and tough Surety TRIPL-PALM GLOVES have an extremely heavy synthetic rubber coating on the palm where the greatest resistance to wear and abrasion is needed most—yet, they are soft and pliable for hand comfort. On any job where there is extreme abrasive action—TRIPL-PALM GLOVES will outwear, by many times, the usual coated glove.

All styles available from your jobber or write today.

NO SEAM HERE
WING THUMB CONSTRUCTION MULTIPLIES GLOVE LIFE

THE SURETY RUBBER CO.
DEPT. I, CARROLLTON, OHIO

If you write maker identify as IEN - 10487

COST-CUTTING "STREAMLINER" CONVEYOR SYSTEMS

Set up for continuous production! To eliminate needless manhandling, to speed the flow of materials from one department to another . . . metal stampings are moved from punch presses to assembly operation on a "Streamliner" Horizontal Belt Conveyor. Because it's engineered to customer's plant and product, this production-increasing "Streamliner" saves time, money and effort—helps to move materials safely, too! Write for our 24-page "idea-stimulating" catalog. It shows examples of "Streamliner" Conveyors in action!

HARRY J. FERGUSON COMPANY
133 WEST AVENUE, JENKINTOWN, PENNA.

If you write maker identify as IEN - 10488

Relays BY GUARDIAN Series 220 A.C.

Jet pilots depend upon electrical controls for safe, maneuverable flying, clear communications and precision gunnery. Guardian Electric—makers of all types of control stick grip switches and control panels—is a major supplier to the U. S. Air Force. Guardian Relays, either open mounted or *hermetically sealed*, are used extensively for airplane design, maintenance and repair. Along production lines Guardian Relays are usually associated with Thyratron Tubes working with other Thyratron or Ignatron tubes to control the current for spot, projection, seam and other types of resistance welding. Reduced maintenance costs, better welds, better ships in the air, better armament result with Guardian Relays in action! *Write.*

GUARDIAN ELECTRIC
1620-K W. WALNUT STREET CHICAGO 12, ILLINOIS
A COMPLETE LINE OF RELAYS SERVING AMERICAN INDUSTRY

If you write maker identify as IEN - 10489

WELDING . . Capacitor arc machine to assemble studs on metal parts

Source: GRAHAM MFG. CORP.
1539-43 E. 8-Mile Road, Ferndale 20, Mich.

Little studs on big work

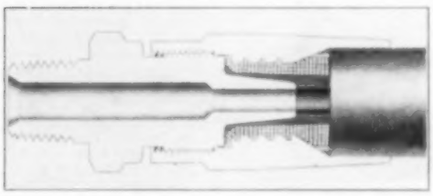
The company announces the addition of two new portable machines in its line of stud-welding equipment. The smaller of the two rates studs to ¼ in. in diameter. The larger one will handle studs to ½ inch. Both operate on 110-volt 60-cycle ac. Both are designed for application of studs on equipment too large to bring to the stationary machine, previously described IEN-12244-49 in a single-head model for studs to ½ inch.

The operator places a stud in a collet chuck forming a part of the 2 by 7-in. welding head. He then uses this head to contact the stud at the point it is to be welded and presses it against the work. This causes retraction in the head by a small amount against opposing spring pressure and "triggers" the bank of capacitors contained in the welder housing. The resulting electric surge builds up an arc between the stud and the work surface and completes the weld. The head connects to the welder housing by means of a cable. Operation can be maintained with cable lengths to 50 feet.

If you write maker identify as IEN - 10490

HOSE FITTING . . Reusable coupling for wire reinforced hose, ⅛ to ½ inch

Source: LINCOLN ENGINEERING CO.
5732 Natural Bridge Ave., St. Louis 20, Mo.



About 80 cents to $1.70 zinc plated

Lok-Tite trade names a new two-part steel coupling made up of a main body and a collar. The body is threaded on its outer end for either male or female connection to a pipe or machine. The opposite end fits into the bore of the hose. The collar carries threads to engage the body. It also carries a coarse buttress thread that works into the wire braid of the hose after the outer cover has been removed and the hose turned into place. Compression set up in the wire-reinforced core grips the hose to develop full hose strength when the collar is turned into place on the body.

The smallest ⅛-in. size with a male thread develops 2,500 lb. working pressure. The ¼-in. size rates 5,000 pounds. The largest ½-in. unit, with a female thread, rates 3,600 pounds.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 60

If you write maker identify as IEN - 10491

If you write maker identify as IEN - 10492

Poor Voltage Slowing Production?

...install General Electric Inductrols
(dry-type induction voltage regulators)

When voltage sags, motor performance and lamp brilliance suffer. Efficiency and output drop sharply. That's why it pays to keep voltage up with General Electric's Inductrols. These new dry-type regulators *automatically* maintain correct voltage on your electric equipment—assure peak operating efficiency.

G-E inductrols do not require expensive fireproof vaults. All-steel cabinets attractively styled, protect personnel by completely enclosing all live parts.

For information on how, when and where to apply Inductrols contact your G-E sales representative or authorized dealer. Write for Bulletins GEC-712 and GEC-795 *General Electric Company, Schenectady 5, N. Y.*

GENERAL ELECTRIC

If you write maker identify as IEN - 10493

PROBLEM: How to Get Higher Performance and Longer Wearing Qualities in Contact Assemblies

GENERAL PLATE: Meets the Specified Requirements with TOP-LAY, A Composite Metal Combination

Have You a Composite Metal Problem? General Plate can solve it for you.

Manufacturers of electric motor starters had frequent trouble with contact assemblies which were made by brazing the contact to the base metal carrier. This method results in annealed contacts and carriers which in turn means lack of strength, poor wearing qualities and short contact life.

General Plate's Top-Lay contacts and contact material meet the engineering specifications by providing the higher performance necessary. Made by cladding silver or precious metal strip to suitable base metal, Top-Lay is cold worked by profile rolling which gives it a hard, long-wearing surface. In addition, Top-Lay saves on fabrication costs as it is easily blanked and formed to the required shape. (For information on Top-Lay write for Technical Data Bulletin #714.)

No matter what your metal problem, it will pay you to consult General Plate. Their vast experience in cladding precious to base metals, or base to base metal combinations can overcome your problems . . . often reduce costs as well.

General Plate Products include . . . Precious metals clad to base metals, Base metals clad to base metals, Silver Solders, Composite contacts, buttons and rivets, Platinum fabrication and refining, Age-hardenable #720 Manganese Alloy.

GENERAL PLATE *Division of Metals & Controls Corporation*
79 FOREST STREET, ATTLEBORO, MASS.

If you write maker identify as IEN - 10494

Drill Hardened Steels without Annealing—

With the new, improved "HARDSTEEL" Drill, you can do accurate, smooth drilling, countersinking, counterboring and reaming in steels hardened by any process without first annealing the work. And they work with equal ease on work-hardening steels and high carbon—high chrome steels of any degree of hardness.

"HARDSTEEL" Drills fit standard drill presses. They save time and reduce rejects. They permit engineering changes requiring additional drilling after hardening. And parts drilled after hardening always match at assembly.

Write for a copy of the "HARDSTEEL" Operators Manual showing how "HARDSTEEL" drills are cutting costs in thousands of plants.

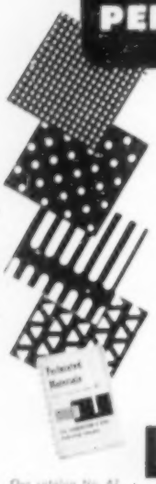
You Harden It—We'll Drill It—
With "HARDSTEEL"

BLACK DRILL COMPANY, INC.
1378 East 222nd St. • Cleveland 17, Ohio

Also makers of—
BLACK DRILLING UNITS—AUTOMATIC, SELF-CONTAINED—FOR COST-CUTTING PRODUCTION ON ALL MATERIALS
Write for information

If you write maker identify as IEN - 10495

Have You Considered H & K PERFORATIONS



... to answer the problems of eye appeal or ventilation or drainage or acoustical correction, or to provide a satisfactory material to screen, grade or guard your product.

H & K Perforations are furnished in a wide range of sizes, shapes and spacings in all currently available metals and nearly all plastics which are obtainable in the form of plates, sheets and coils.

We can perforate sheets to special sizes and form, weld and otherwise fabricate to your specification.

Tell us your needs and let us make recommendations and quote you prices.

Our catalog No. 62 will be promptly sent upon request.

The Harrington & King Perforating Co.
5657 FILLMORE ST., CHICAGO 46, ILL.
114 LIBERTY ST., NEW YORK 6, N. Y.

If you write maker identify as IEN - 10498

DRILLING . . Quick change chuck for tool change in moving spindle

Source: KURT ORBAN CO.
204 E. 43rd St., New York 17, N. Y.

Made in Germany

Drilling tools of various size are mounted in adapters that apply to this new Speed Chuck. The adapters are inserted and withdrawn from the chuck body while the latter is mounted in a rotating spindle.

The adapter is equipped with a free-rotating knurled ring near its base to provide a point at which the operator can grip it. The chuck carries a spring-backed sleeve which the operator raises with one thumb to release a pair of hardened steel balls that hold the adapter in the chuck body. This permits the adapter to drop free, limited by the operator's hold on the knurled ring, so he can remove the drill with its adapter and insert another.

Rotation starts as soon as the adapter is inserted. When it finally comes up in position where the balls can drop into their holding slots the adapter and the chuck index with relation to each other so the chuck engages two driving keys on the adapter. Its shank rides inside the chuck on guiding ways to hold the drill in line. The chuck is available in several sizes with Morse taper shanks No. 2 to No. 5. It takes adapters with tapers for the tool shanks from No. 1 to No. 4.

If you write maker identify as IEN - 10502

GRAKO Sprazon BELT DRESSING

Sprays on direct from container

New! Unique! Easy to use! Press the valve and spray your belts where slippage occurs — at the smaller pulley. Millions of tiny globules penetrate the leather fibres — make belts pliable, resilient — increase pulley grip. *Safe*: hands and arms are out of danger. *Economical*: 12 oz. container holds enough GRAKO belt dressing to dress approximately 350 sq. ft. of belting.

See your belting distributor

second century G and K — FREE FOLDER

GRATON & KNIGHT COMPANY • Worcester 4, Mass.
World's Largest Manufacturers of Industrial Leather Products

If you write maker identify as IEN - 10496

where ELSE can you use PRINT-AD-STRING

Reg. U. S. Pat. Off.

the "TIE that TALKS"?

Tie up your products with Print-Ad String, and wherever they go they tell people your name or slogan, they give directions, they measure footage, they provide grade markings—they tell whatever you want told . . . and tell it in a novel, colorful way.

Here's a tremendously strong COTTON tie—in thicknesses down to .003, widths down to ⅛", in any color or combination of colors you want—a tie that won't mar or dent the edges of articles tied in it—won't slip in the knot—won't stretch—and adds a smart touch to your package.

Mighty useful for manufacturing short cuts, too. Be informed! Mail coupon now for FREE booklet full of valuable ideas!

YOUR NAME · GRADE · DIRECTIONS · FOOTAGE · IDENTIFICATION, ETC.

BETTER TYING

Holds parts firmly for assembly, cutting, drilling. Holds parts in finished assemblies. Measures running footage. Gives directions, grade marks, identifications.

BIG HELP IN THE PLANT

Good looking all-cotton ties! Flat, won't mar or dent edges of boxes for merchandise. Won't slip in the knot. Non-stretch, great strength. Also used as rip cord opener, from candy bars to survival kits. Ties anything!

MAIL FOR FREE IDEA BOOK!

Dept. 8—Chicago Printed String Co.
2300 Logan Blvd., Chicago 47, Ill.

GENTLEMEN: Without cost or obligation send me your FREE Idea Book.

My Name _____
Title _____
Company _____
Address _____
City _____ State _____

If you write maker identify as IEN - 10499

HOSE FITTING . . Wire clamp and tool for ¼ to 3 inch hose

Source: SQUIRE-COGSWELL CO.
4138-42 N. Kedzie Ave., Chicago 18, Ill.

New clamp, available in a range of sizes, is made of soft steel wire, galvanized and welded, or of brass to specification. It applies by means of a tool as shown in the illustration to draw a loop tightly around the hose and then bend it over so the extended portion can be cut off. Two sizes of tool apply with hose to ¾ in. and 1 to 3 inch. It is not necessary to secure the hose in a vise or fixture in order to apply the new clamp.

Identify as IEN - 10500

A copper rod, some rubber tube, electric wire, clamps, a small step-down transformer and a 50 per cent solution of phosphoric acid combine in a dc electrolytic process to remove heat discoloration from welded seams in sheet metal work. It is particularly good on inside corners that are normally hard to get at. Discolored seams can be treated at rates of 2 to 4 fpm., the process leaving the weld area clean, bright and free from light scale. A patent has been applied for by the company but permission for use of the process and complete details are available from the Development Engineering Department of Armco Steel.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10501

TRY THIS NEW FASTENER—FREE!

For fastening laps of corrugated asbestos or plastic roofing sheets, new work or maintenance — all without scaffolding —

HOLEGRIP

Eliminates all interior scaffolding.
Puts entire crew topside.
Increases fastening speed.
Completely seals holes, new or old.

Here is the fast, 3-step HOLEGRIP method:

1. Drill ½" hole through sheets at side lap.
2. Insert HOLEGRIP; toggle drops to horizontal position, engages nut.
3. Complete fastening by tightening with power nut-runner. Weath-R-seal seals the hole.

***THAT'S ALL!* Total time: 20 seconds!**

For complete information and sample fastener, with tool data, write:

FABRICATED PRODUCTS COMPANY
1952 Water Street West Newton, Pa.

If you write maker identify as IEN - 10503

Added Evidence that

Everyone Can Count on VEEDER ROOT

This Veeder-Root Reset Magnetic Counter, specially designed for flush mounting on panels and in instrument-clusters, can be connected in series to any device that has a contact arrangement. And it can be located at central *Count*rol-points, at a distance from the machine or process on which performance-figures are needed. Write for full facts.

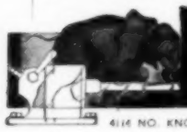
VEEDER-ROOT INCORPORATED
"The Name That Counts"
HARTFORD 2, CONNECTICUT
Chicago 6, Ill. • New York 19, N. Y. • Greenville, S. C.
Montreal 2, Canada • Dundee, Scotland
Office and Agents in Principal Cities

If you write maker identify as IEN - 10505

NOW A WIDE RANGE OF AIR PRESSES

Cut Costs...

These presses deliver from 4 to 28 times the air line pressure, cost from $27.50 to $135.00, and will pay for themselves many times over in faster, more uniform production on light skating, crimping, assembling jobs. Write for new catalog of air cylinders and other air-operated devices.



MEAD
SPECIALTIES COMPANY
4114 NO. KNOX AVE., DEPT. EA-92, CHICAGO 41, ILL.

If you write maker identify as IEN - 10506

3-WAY FULL AREA, PACKLESS SOLENOID VALVES

PIPE SIZES: 1, 1¼, 1½ and 2 inches

We recommend this valve for controlling equipment where pressure must be alternately applied and exhausted as, for example, with diaphragm motor valves, air or hydraulic cylinders, etc. Classed as Bulletin 8551 ASCO Valves, here are a few specifications: maximum pressure 125 to 250 pounds; minimum pressure 10 to 20 pounds. Suitable for handling air, water, gas, oil and other non-corrosive gases or liquids up to 180°F.

Since the automatic control of any alternating application and release of pressure is so important for efficient operation, we suggest that you bring your problems to the attention of our engineers whose experience goes back nearly 40 years.

ASCO Solenoid VALVES

If you have recurrent and varying needs for automatic control valves, you should have our General Valve Catalog No. 23.

When in need of Automatic Transfer Switches, Remote Control Switches, Contactors, Relays, and Specialized Electromagnetic Controls, come to us.

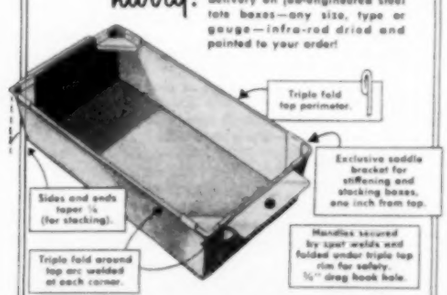
V.S1.3a

Automatic Switch Co.
383 LAKESIDE AVENUE • ORANGE, NEW JERSEY

If you write maker identify as IEN - 10507

"Custom Built"
STEEL TOTE BOXES
to your job specifications

in a hurry! Send us your blueprints or requirements—we'll make speedy delivery on job-engineered steel tote boxes—any size, type or gauge—infra-red dried and painted to your order!



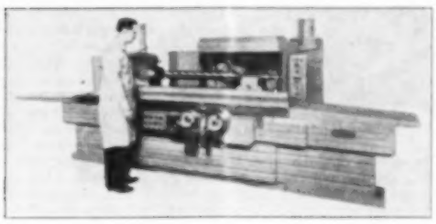
Boxes are made from one piece and folded at ends as shown and spot welded throughout.
Write or wire now.
FOR FAST ACTION PHONE GRANT 1-0292

STEWART-PARKER CO.
FRICK BUILDING • PITTSBURGH 19, PA.

If you write maker identify as IEN - 10508

GRINDING . . Machine for threads and worms, 48 in. between centers

Source: EX-CELL-O CORP.
1202 Oakman Blvd., Detroit 32, Mich.



Illustrated details in Bulletin 48824

Style 36 is a new precision grinding machine to produce threads, worms and other forms on work to 8 in. in diameter with an 8-in. wheel or to 12 in. in diameter with a 14-in. wheel. Maximum swing over the table is 19 in. in diameter. Maximum diameter that can be inserted through the work spindle is 3 in. and work length between centers is 48 inches. The machine will grind 36 in. of this 48-in. overall length.

Single and multiple start threads, right or left hand, can be ground in any pitch from 1 to 128 threads per inch. The machine can be used with single or multiple width grinding wheels. An attachment to grind internal threads is available. Feed to finish size, wheel dressing, work size compensation for dressing, resumption of the grinding cycle after dressing, backlash compensation, control of coolant flow, lubrication and retraction of the wheel at the end are all automatic.

Work drive is by a variable speed hydraulic motor connecting to the work spindle by a V-belt and worm. Four orifice valves control the speed. The table is traversed by a hardened and ground lead screw driven by a train of gears.

The wheel spindle is the company's precision ball bearing design. It is driven by a V-belt and step pulley connecting to a motor mounted directly behind it. The spindle, drive motor and wheel dresser are mounted on the wheel side. The spindle and its motor can be tilted to the right or left to obtain the desired helix angle. Floor space measures 225 by 118 inches.

If you write maker identify as IEN - 10509

DRILLING . . Carbide tipped tool for cored castings, ¾ to 4 inches

Source: TILDEN TOOL CO.
207-11 Los Molinos, San Clemente, Calif.

Cuts through sand and chilled surface spots

Eight carbide cutters are employed in the end face of this new core drill. The drilled body carries a side slot to clear the core cuttings. A tapered shank threads into the rear end. The drill is available in lengths to 36 in. and can be supplied with a plain pilot for counterboring or a twist drill pilot for step drilling. A coolant feed attachment is available.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10510

New "PULL-GEAR" SPEED-REDUCING PULLEY
Increases Drill Press Capacity

Reduces speed of pulley 4½ times, giving a spindle speed range of approximately 75-4000 RPM on standard, light-type drill presses. Makes possible the use of drills up to 1¼" without burning or stalling motor.

ALSO IDEAL FOR TAPPING, REAMING, BORING, ETC.

Designed to operate on all types of drill presses and other machines using a V-belt drive. Installed on motor shaft in 5 minutes. No bracket required. Drills up to 1¼" in steel. Taps up to ⅝" in steel. Reams and bores up to 5" in steel. Ideal also for spot-facing, counter-boring and other operations requiring slower speeds than are normally obtainable on standard machines.

Made in 3 Motor Shaft Sizes ½" • ⅝" • ¾"
$62.00
F. O. B. Detroit

Some Territories Open to Jobbers

THE PULL-GEAR CO.
21125 Dequindre St. Hazel Park, Michigan
WRITE FOR LITERATURE

If you write maker identify as IEN - 10511

KUSHION-TORQ
WHAT IT WILL DO FOR YOU

The Cushion Torque of Kanti-Lever Couplings absorbs the hammer blows of sudden or reversing loads and dampens the torsional and radial vibration that causes wear, fatigue and sometimes failure of Motors, Speed Reducers, Ball Bearings and productive machinery. No other coupling is like the Kanti-Lever: It has a circular series of laminated Cantilevers of 200,000 lb. steel, operating in slots, the tapered slides of which automatically stiffen the Cantilevers under increased overloads. Special end play up to four inches is possible without end thrust. The outer periphery of the Kanti-Lever is available as a brake drum for quick-stopping or reversing machinery.

Send for Bulletin No. 20-N.

Kanti-Lever Couplings

4,000,000 h.p. in Use

MFRS. OF SECTIONAL STOCK RAVKS

BROWN ENGINEERING CO.
122 NORTH 3RD ST. READING, PENNA.

If you write maker identify as IEN - 10512

Impervious to solvents, Baker "Bak-O-Plast" paint brush handles stay smooth and comfortable to the touch. Well balanced, strong, easily produced, they re made of **BAKELITE General-Purpose Phenolic Plastic BM-16450.**
Molded by Shaw Insulator Co., Irvington, N. J., for Baker Brush Co., New York, New York.

Electrical resistivity of these textile pulleys prevents build up of high static charges as fibers pass over them. They re made of **BAKELITE Medium-Impact Resistant Phenolic BM-14111,** are light in weight, strong, smooth, and wear-resistant.
Made by Meadows Mfg. Co., Atlanta, Ga.

This heavy-duty three-terminal electrical connector for trailer coaches has plug and receptacle of Black **BAKELITE Improved-Impact Phenolic BM-6260.** They stand up under a 50 amp., 110 volt current, are resistant to mechanical shock and to moisture.
Molded for Theodore Bargman, Detroit, Mich., by Molded Products Company, Detroit, Mich.

Impact strength, smooth durable finish, and resistance to heat and moisture qualify phenolic plastics for this job! It's an aspirator in the Bendix Economat clothes washer, molded of Black **BAKELITE Impact and Alkali-Resistant Phenolic BM-13080.**
Molded by Plastic Research Products, Urbana, Ohio.

WHY THEY PICKED PHENOLIC PLASTICS!

What do *you* want for *your* product? Good finish? Impact strength? Dielectric strength? Resistance to wear, moisture, or chemicals? Simplified production?

Like the manufacturers of these products, you may find the right combination of properties among BAKELITE Phenolic Plastics. Their wide variety means that you can pick the plastic fitted to your particular needs. Their broad range of properties makes them useful for thousands of applications.

Why not look into BAKELITE Phenolic Plastics as a means of improving design, production, performance and sales? Our engineers will help you. Just write Dept. DY-14.

BAKELITE
TRADE MARK
PHENOLIC PLASTICS

BAKELITE COMPANY
A Division of
Union Carbide and Carbon Corporation
30 East 42 Street, New York 17, N. Y.
In Canada:
Bakelite Company (Canada) Ltd., Belleville, Ont.

If you write maker identify as IEN - 10514

SPRAY NOZZLES... two guides to proper selection!

No matter what you may face in the way of a spraying problem, it can be solved quickly and at low cost with Spraying Systems Spray Nozzles. Two fact-packed catalogs—No. 22, General Industrial Spray Nozzles, and No. 23, Pneumatic Atomizing Nozzles—are yours for the asking. They show you all the various types of spray nozzles available . . . explain design and construction . . . and outline spray characteristics such as atomization, impact of spray and capacity. Write for your copies today.

SPRAYING SYSTEMS CO.
ENGINEERS AND MANUFACTURERS
1208 RANDOLPH STREET BELLWOOD, ILLINOIS

WRITE FOR CATALOGS NO. 22 AND NO. 23

If you write maker identify as IEN - 10515

NEW REMINGTON STUD DRIVER

MODEL 450

Cartridge-powered tool sets fastening studs in seconds . . . *SAFELY!*

Completely self-powered, the amazing new Remington Stud Driver sets up to 5 fastening studs per minute—with no outside equipment, wires or cables required. Wood or steel structural sections are attached to steel or concrete surfaces in a matter of seconds!

Engineered for safety, the Remington Stud Driver is compact and portable . . . weighs only 5½ lbs. Swiveled construction permits easy loading, easy handling. All working parts of the Stud Driver are made of alloy steels . . . housing of strong, lightweight aluminum.

You can speed construction fastening up to 100 times faster than conventional methods with the Model 450 Remington Stud Driver. Why not see for yourself how this revolutionary new tool can cut costs and improve efficiency in *your* construction program. Send in the coupon below for complete information.

"If It's Remington—It's Right!"

Remington
DU PONT

Listed and Approved by Underwriters' Laboratories

CLIP AND MAIL THIS COUPON TODAY

Industrial Sales Division, Dept. IEN-8
Remington Arms Company, Inc.
939 Barnum Ave., Bridgeport 2, Connecticut

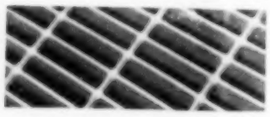
Please send me detailed information on the Model 450 Remington Stud Driver.

Name_____
Firm_____
Position_____
Address_____
City_____ State_____

If you write maker identify as IEN - 10517

FLOORS . . Welded steel grating provides non-slip walking surface

Source: KLEMP METAL GRATING CORP.
1369-73 N. Branch St., Chicago 22, Ill.



Detail data on request

Klemp Krest trade names new welded grating made of rectangular load bearing bars on 1 1/16 in. centers and cross bars at right angles on either 2 or 4 in. centers. The cross bars are made of 3/8 or 5/16-in. stock formed into a V shape for their upper half and remaining round for the lower half. Assembly is by high pressure and welding to impress the round bottom bars into the load bearing bars. A flat occurs on top at each intersection. The V-edge remains between the intersections to form a slip proof surface.

Panels are available to 36 in. in width and 30 ft. in maximum length with cross bar spacing at 4 inches. They are maximum at 24 in. in width and 30 ft. in length on the 2-in. spacing. Rectangular bars measure 3/8 in. or 5/16 in. in thickness. One ranges from 3/4 to 1½ in. in depth and the other from 3/4 to 2¼ inches. Illustrated detail information, including safe load tables for the company's welded and diamond grating, stair treads and floor steel reinforcing are assembled in a new bulletin, "Klemp 4 Grates."

If you write maker identify as IEN - 10518

PLASTIC . . Laminated sheet, Fiberglas mat and Melamine resin

Source: CONTINENTAL-DIAMOND FIBRE CO.
2 Chapel St., Newark, Del.

Technical data upon request

Dilecto GM-1 is a new laminated thermosetting sheet material with excellent arc and flame resistant qualities. It is designed for use in switchboard panels, sub-panels, arc barriers for switches and circuit breakers, television flyback transformer panels, armature and field coil slot wedges and spacers.

The sheet is moisture resistant and can be employed in temperatures to 300 deg. F. continuously or 350 deg. F. intermittently. Flexural strength is to 28,000 pounds. Two sizes are 38 by 38 in. and 38 by 42 inches. Thickness ranges from 1/16 to ½ inch. Color is gray-white with semi gloss finish.

Identify as IEN - 10519

Sonotrack is a new magnetic sound-track striping service by Eastman Kodak for application on single perforated Kodachrome or black and white Kodak film. Application is to the side of the film toward the projector lamp on film taken either at sound or silent camera speeds. Now you can add sound to your silent films or vary the sound track of other films to meet various needs by sending your film in for this purpose. Charge will be 3½ cents per foot on a minimum order charge of $10. You can get action through any Kodak dealer.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10520

A PAID NEWS ADVERTISEMENT BY SAMUEL MOORE & COMPANY

PLASTIC COATED TUBING

Conserves critical metals in many applications

Dekoron tubing—metal tubing sheathed in plastic—has many uses:

Tubular furniture, appliances, guard rails, and baggage racks. Chromium and other costly finishes are replaced by the plastic armor. Dekoron tubing is made in a wide range of colors, has a high luster, is chip-proof, warm to the touch, can be given a high dielectric strength.

Corrosion-resistant instrument tubing and electrical conduit are prominent industrial applications. Plastic armor extruded over steel, copper, or aluminum protects the tubing against moisture, salt air, acids, alkalies, and corrosive atmospheres. In numerous cases Dekoron tubing with a carbon steel core has outlasted expensive alloy several times.

Dekoron tubing sizes range from about 1/8" OD to 3" or more; plastic thickness varies widely, is based on the tubing application.

For more data, write Samuel Moore & Company, Mantua, Ohio, using IEN # 10520, or circle number on card enclosed.

If you write maker identify as IEN - 10521

GREATER PROTECTION WITH **STASAFE**

GRA-LITE GARMENTS

- **Acid Resistant**
- **Alkali Resistant**

Garments of every design are available in GRA-LITE, a tough, resilient fabric that's as much as 40% lighter than other impervious fabrics, yet is recommended for jobs requiring the maximum chemical resistance and wear.

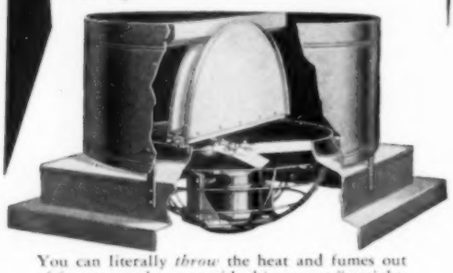
Send for free booklet No. 559 showing suggested models.

STANDARD SAFETY EQUIPMENT COMPANY
232 West Ontario St. Chicago 10, Ill.

If you write maker identify as IEN - 10522

To help you solve industrial Ventilation Problems efficiently, economically—the Swartwout Whirlout...

"straight-through" powered ventilator



You can literally *throw* the heat and fumes out of factory workrooms with this newest "straight-through" roof ventilator. Whirlout is a simple, sturdy unit of the type that has been growing in popularity for several years.

For many situations where fast powerful exhaust is desired above furnaces, ovens, pickling vats, or *any* operation that creates heat, smoke or fumes, Whirlout does it in a hurry. The circular body forms a chute directing the airflow straight up, to be dispersed by air currents. There's practically no air friction created except by the center dampers, which are necessary to make the ventilator weather proof when not operating. (Weather is kept out by the blast of air when fan is operating.)

Whirlout is powered by an efficient ball bearing motor driving an airplane type propeller with square-tipped blades. The air-stream is guided by a streamlined throat directly above the fan. Ten sizes, with a wide selection of cfm capacities, are available. It's worthwhile investigating Whirlout for your tough ventilating jobs. Write for full description—Bulletin 346B.

The Swartwout Co.
18511 Euclid Avenue • Cleveland 12, Ohio
Industrial Ventilation Specialists Since 1904

If you write maker identify as IEN - 10524

Sticky, Gummy Materials CAN be pumped!

ADHESIVES
PUTTIES
SEALERS
HEAVY COATINGS

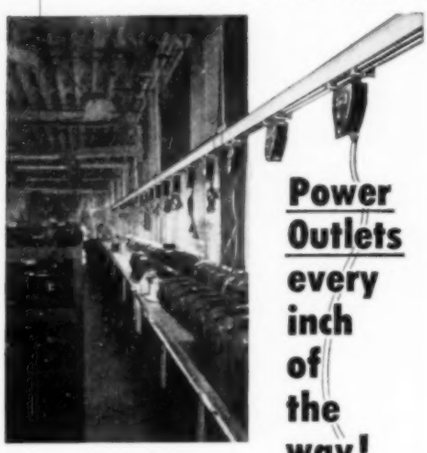
YOU CAN handle an amazing variety of heavy industrial fluids and semi-solids with Graco Powerflo Pumps! Air operated, they work in any location, pumping out of pails or 400 lb. original drums. Hoses, flow guns, spray guns, nozzles available. Tell us what your heavy material is, and we'll tell you frankly what savings Powerflo can make. We have some interesting case histories. Write now for free Powerflo catalog.

GRAY COMPANY, INC.
62 Graco Square
Minneapolis 13, Minnesota

GRACO
Powerflo pumps

Regional Offices: New York, Philadelphia, Detroit, Chicago, Atlanta, San Francisco

If you write maker identify as IEN - 10525



Power Outlets every inch of the way!

ELECTRIC FEEDRAIL®

—for maximum safety, convenience, adaptability

● The smooth-rolling trolley outlets can tap power at any point along the entire length of a run. Electrical outlets are always available where or when you need them when ELECTRIC FEEDRAIL is on the job. Additional trolleys can be added in a matter of minutes without shutting off power. If you're planning a plant addition, a revised production set-up, or a new plant—remember that FEEDRAIL is the electric power distribution system you can't afford to overlook. A FEEDRAIL engineer or field representative will be glad to provide you with details. Call him in today.

Catalog No. 25 *gives the complete Feedrail story—shows you where, when and how to install this modern electric power distribution system. Write for a copy today.*

Sold by leading electrical distributors

SD-2A

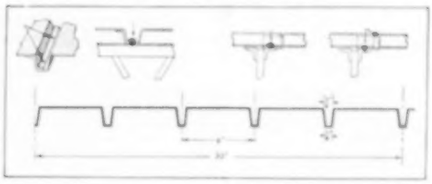
Never Becomes Obsolete
ELECTRIC FEEDRAIL
FEEDRAIL CORPORATION
Subsidiary of Russell & Stoll Company, Inc.
125 BARCLAY STREET · NEW YORK 7, N. Y.

SPECIALLY QUALIFIED REPRESENTATIVES IN PRINCIPAL CITIES

If you write maker identify as IEN - 10527

BUILDING . . Formed steel sheet for roof, wall, partition construction

Source: AIRTHERM MFG. CO.
752 S. Spring Ave., St. Louis 10, Mo.



Illustrated details in Catalog 202

Load capacity has been increased by 25 per cent as compared to the original design of the company's formed steel roof sheet previously described IEN 9135-45. The new sheet carries the same corrugations, 1½ in. in depth, as the original design but its effective width has been decreased from 36 to 30 in. and spaces between the corrugations from 6⅞ to 6 inches. Adjacent sheets nest together and are welded on the job. Sheet length is to 196 inches. Thickness is 22, 20 or 18 gage. The heaviest 18 gage sheet rates 233 lb. per square foot on a 3-ft. span in simple loading.

The deck will take asphalt roll roofing directly on the metal surface or on an insulating layer of Foamglas secured to the metal with hot asphalt. The sheets are installed with the ribs vertical in wall and partition construction.

If you write maker identify as IEN - 10528

VALVE . . Four way design for pneumatic pilot pressure operation

Source: HANNIFIN CORP.
1108 S. Kilbourn Ave., Chicago 24, Ill.

Push button control

Series BB designates the company's new pilot pressure operated four-way valve which it now announces as available for operation on 15 to 150 lb. pressure in pneumatic control lines. The valve consists of a combination of two Series B three-way Pilot Master valves, previously described IEN 5732-52, and a pilot head. This head employs the same spring return piston valve as the one used on the two and three-way assemblies. It is capable, in this case, of applying or releasing pressure simultaneously on the two piston poppets in the combination housing.

The valve ports are arranged so one side stands normally closed while the other is normally open for regular four-way operation. The two shift simultaneously when pressure is introduced to the chamber above them. Pressure within the valve returns them to their normal positions when the pilot pressure is released. Operating speed is to 600 cycles per minute.

Cartridge design features the valve construction in which the piston poppets are assembled in brass housings for removal and replacement as units. The housing serves both as a piston cylinder and the upper poppet seat. The cartridge assembly is identical for the ⅜, ½ and ¾-in. valves. Electrical characteristics of the solenoid are subject to specification.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10529

FREED *Instruments*

1010 COMPARISON BRIDGE
Self contained—A.C. operated
Rapid and accurate test of Resistors, Condensers, Inductors.

1020B MEGOHMMETER DIRECT READING
Self contained—A.C. operated
Electronically regulated supply
1 megohm to 2 million megohms

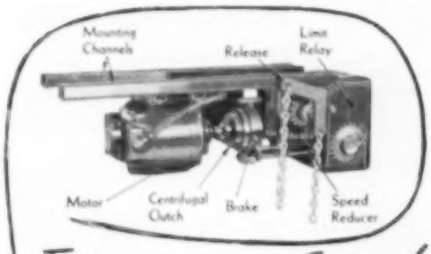
1110A INCREMENTAL INDUCTANCE BRIDGE
For accurate testing of communication and television components under load conditions.

1040 VACUUM TUBE VOLTMETER
Self contained — A.C. operated
High impedance—wide frequency
Used at Audio & Supersonic frequencies.

SEND FOR COMPLETE TRANSFORMER AND INSTRUMENT CATALOGS

FREED TRANSFORMER CO., INC.
INSTRUMENTS DIVISION
1732-B Weirfield Street
BROOKLYN (RIDGEWOOD) 27, N. Y.

If you write maker identify as IEN - 10530



Features THAT MEAN *Savings!*

From the mechanical features marked above, you will gain substantial economies in door operation — because they provide accurate door travel, smooth starting and stopping, ruggedness and long life in the Operator, and minimum maintenance. With these savings, plus employee time and heat savings, your Barcol Electric Door Operator can PAY FOR ITSELF quickly.

BARCOL **ELECTRIC DOOR OPERATORS**

Factory-Trained Sales and Service Representatives in Principal Cities

BARBER-COLMAN COMPANY
114 MILL STREET, ROCKFORD, ILLINOIS

If you write maker identify as IEN - 10531

DE WALT *"3 adjustment action"* assures easier, faster performance!

for
- PLANT MAINTENANCE
- PATTERN SHOPS
- CRATING AND BOXING
- CONSTRUCTION WORK

Here's the ideal, all-purpose machine to streamline your cutting operations, help to increase production and cut costs.

De Walt's "3 adjustment action" allows you to position saw for any desired operation....in seconds!

You can make 15 set-ups, 15 different cuts...in less than 15 minutes! You get precision, speed, complete safety. A De Walt does the work of many machines—takes up the space of one.

Write for catalog to: De Walt Inc., Dept. E-9, Lancaster, Pa.

De Walt Inc. **DE WALT** Lancaster, Pa.

POWER SAWS

Subsidiary of AMERICAN MACHINE AND FOUNDRY COMPANY, New York

If you write maker identify as IEN - 10532

WE OFTEN DO THIS–

to deliver Synthane Plastics on time

On-time delivery of Synthane laminated plastics parts and materials is one of our prime principles of service. Sometimes we almost have to stand on our heads to make it, but we do usually deliver the goods for our customers when wanted. If you are not now a customer and need materials or fabricated parts with an unusual combination of valuable properties, find out about Synthane. Mail the coupon today for complete information.

SYNTHANE

Manufacturers of laminated plastics
SHEETS
RODS • TUBES
MOLDED-LAMINATED
MOLDED-MACERATED
FABRICATED PARTS

SYNTHANE CORPORATION
South River Road, Oaks, Pa.

Gentlemen:
I'd like to know more about Synthane laminated plastics. Please send your catalog to:

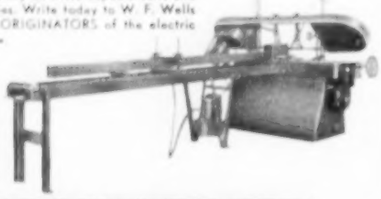
Name _____
Address _____
City _____ Zone ____ State _____

If you write maker identify as IEN - 10533

Here's cutting capacity that spells out

P-R-O-F-I-T

First choice in plant after plant . . . and for several good reasons! W. F. Wells & Sons units give you longer blade life, sturdier construction for trouble-free service, many unique features of operation. Capacities range from 9" x 16" to 24" by 24". Model H (shown at right) is a hinge-type, economy model with hydraulically lowered frame. Models M, D, and J (Model M shown below with bar feed) feature both full and semi-automatic operation. Get the full story on these capable saws and accessories. Write today to W. F. Wells & Sons, ORIGINATORS of the electric band saw.



W. F. WELLS & SONS
Three Rivers, Michigan

If you write maker identify as IEN - 10534

Revolutionary!

NEW *Wheeler* "DAY-FLO UPLITER" INDUSTRIAL FIXTURE LINE

Reduces direct glare to a minimum! Approximately 28% of total fixture distribution is UPWARD and 72% is DOWNWARD. Result — better brightness ratios . . . higher quality illumination . . . greater seeing comfort. Individual or Continuous mounting. For further details, write: WHEELER REFLECTOR COMPANY 275 Congress St., Boston 10, Mass.

Wheeler REFLECTORS

MADE BY SPECIALISTS IN EQUIPMENT SINCE 1881

If you write maker identify as IEN - 10535

NEW THREAD COMPOUND

Licks Stud Freezing Even at 1800°F.!

SAFE for all high temperature applications!
SAFE for Stainless and Alloy Steels, too, will not pit or corrode!
IDEAL as a cutting compound to prevent galling of Stainless Steel!

Make a convincing test of Fel-Pro C-5 "Hi-Temp" Thread Compound at our expense. Then you can be sure that C-5 will do everything we say it will do. See how it cuts heater dismantling time—how it cuts costly stud breakage and eliminates pitting. Then you will standardize on C-5 just as have some of the nation's largest refineries, utilities and process industries. Write for FREE Sample and data sheet TODAY!

FREE TEST SAMPLE! Send for YOURS *TODAY*

FEL-PRO C-5 "HI-TEMP" THREAD COMPOUND

FELT PRODUCTS MFG. CO.
1521 CARROLL AVENUE • CHICAGO 7, ILLINOIS

If you write maker identify as IEN - 10536

HUMIDIFYING . . Motor driven unit delivers water mist, 1½ or 3 gph.

Source: BAHNSON CO.
1003 S. Marshall St., Winston-Salem, N. C.

Horizontal delivery

The base of this new Type-E humidifier constitutes a water reservoir and connects to a suitable water supply. Level is controlled by a float valve. Above the water is a motor driven fan. Its suction action picks up the water which then is atomized by centrifugal force and is mixed with the air stream for radial discharge. The fine mist remains suspended in the air stream until it is completely evaporated. Directional distribution can be controlled by employing discharge shields at certain points around the complete circle.

Two models are equipped with ⅛ and ¼-hp. motors for operation at 1,750 and 3,450 rpm. on 110 or 220-volt ac. The smaller unit rates ½ to 1½ gph. The larger one will atomize ½ to 3 gph.

Normal installation is by means of hangers from the ceiling in a space that is to be maintained at a desired relative humidity. The company's Type-MBEI electric humidistat can be specified for the control. Overall dimensions are 18¼ in. in greatest diameter, 15½ in. in height. Weight is 48 pounds. The motor is totally enclosed, sealed, ball bearing construction. The housing is made of non-corrosive metal.

If you write maker identify as IEN - 10537

BEARING . . Roll type assembly pilots tool in fixture or chuck

Source: J. G. JERGENS CO.
11104-8 Avon Ave., Dept. IEN, Cleveland 5, Ohio

Seals exclude dirt

Outer race with a seal at one end and an assembly cap at the other encloses a double row Timken bearing to carry an inner race in this new bearing assembly. The inner race is fitted with a collar, shown to the right in the illustration. The outer race is designed for a light press fit into the center hole of a chuck or into bored openings in a fixture to carry a pilot extension that will assist in supporting a cutter arbor or a boring bar.

Sizes range from 1⅝ to 8 in. in outer race diameter and from a little over 1½ to 4¼ in. in shank length for the press fit. Bore to carry a pilot ranges from ½ to 4 inches. Both the bore and the outer diameter are accurate to four decimal points.

Identify as IEN - 10538

Service life of black steel pipe, carrying chlorine for fluxing and degassing purposes into a bath of molten aluminum, has been extended from 10 minutes to 148 minutes by porcelain enameling the pipe. A thousand ton of pipe have been saved at Reynolds Metals Alabama Plant in 18 months of application. Barrows Porcelain Enamel Co. is preparing the pipe.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10539

SAMSON ANGLE BENDER

with quick grip clamping device

Hardened steel replaceable jaws • Stop gauge for setting angles • Quick adjustment for thickness • Fast • Accurate • Easy to operate

IMMEDIATE SHIPMENT

Write for catalog of Metal Working Equipment

$69.30
f.o.b. New York, subject to change

Capacity:
3" x 3/16" flats | ½" rounds
½" squares | 2½" x 2½" x ¼" angles

JULIUS BLUM & CO., Inc.
Established 1910
540A West 22nd St., New York 11 • WAtkins 9-7042

If you write maker identify as IEN - 10540

AUTOMATIC :3 ACTION

numbering machine

MODEL 150

3 movements — consecutive, duplicate, repeat. Triplicate or quadruplicate available in place of duplicate. Prefix letter wheels available in place of figures. Clear-cut figures, 6 wheels.

Write for catalog E

345678
Facsimile Impression

WM. A. FORCE
& COMPANY, INCORPORATED
216 NICHOLS AVE., BROOKLYN 8, N. Y.
Sales Offices: New York, Chicago, San Francisco, Montreal

If you write maker identify as IEN - 10541

IMMEDIATE SHIPMENT

STYLE 300 STACKING BOX

ALL PRICES F.O.B. FACTORY, PHILA.

COMPLETE CATALOG ON REQUEST

Just right for small parts. Light in weight. Easy to handle. Equipped with drop handle each end. Runners save wear on bottom of box and act as positive stacking lock. Will stack with style 700 stacking bin of the same length and width.

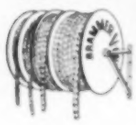
Product Number	Width	Length	Height	Gauge Steel	Price Plain	Price Green
301-20	6"	9"	3½"	20	$ .85	$ .98
302-20	8"	12"	4"	20	.96	1.09
303-19	9"	13½"	4½"	19	1.20	1.38

PHONE • WIRE • WRITE
BAldwin 9-1805

BAY PRODUCTS, INC.
3011 N. 16TH STREET • PHILADELPHIA 32, PA.

If you write maker identify as IEN - 10542

Mr. CHIEF ENGINEER



Get the FACTS OF "V" Link Belt LIFE

You can Cut Production Costs with BRAMMER.

HERE'S HOW. Use $ coils of BRAMMER "V" Link Belting to replace 315 standard sizes of endless V-Belts. Any length can easily be installed—in minutes—*without dismantling equipment.*

BRAMMER IS *BETTER* "V" LINK BELTING

- **PRE-STRETCHED**—No tensioning devices needed . . . means lower maintenance costs.
- **PRE-TESTED**—Vibration-free . . . will run in either direction.
- **NON-SLIP**—Perfect wedging . . . equal to a positive drive.
- **NO DOWNTIME** due to breakdown—Link construction permits immediate repair or replacement.

Send for Data Book 205E giving the full story.

BRAMMER CORPORATION
684 BROADWAY • NEW YORK 12, N. Y.

BRAMMER V-LINK BELTS
TOMORROW'S BELTING . . . *TODAY*

If you write maker identify as IEN - 10543

WRITE FOR THIS FREE BULLETIN

Vapofier—the Industrial Oil-Gas Generating Unit used for primary fuel source or as standby for natural gas.

VAPOFIER CORPORATION
10326 South Throop St., Chicago 43, Illinois

If you write maker identify as IEN - 10544

YOU'RE PAYING $100,000,000 FOR DERMATITIS

Amazed? That's the annual cost to industry. $100,000,000. Compensation and medical care for the average case is $200. Plus, further hidden costs — absenteeism, replacement training, sacrificed quality, lowered morale, lost production. All, needless expense. *Because dermatitis can be controlled!*

How? With West's simple, inexpensive prevention and control program that (1) makes sure of personal cleanliness (2) protects exposed skin areas (3) prevents clothing contamination (4) guards against special hazards.

The WEST Dermatitis Control Program is based on an in-*your*-plant survey — made without obligation or inconvenience to you. A West representative will be glad to give you details.

FREE BOOKLET! *Write for your copy of West's new Dermatitis Control Booklet.*

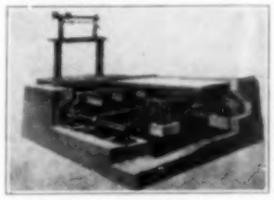
WEST DISINFECTING Company

42-16 WEST STREET, LONG ISLAND CITY 1, N. Y.

If you write maker identify as IEN - 10546

WEIGHING . . Platform design for individual vehicle axle loads

Source: HOWE SCALE CO.
1041 Strongs Ave., Rutland, Vt.



Ask for Bulletin 682

Three capacities are to 15, 20 and 30 ton in the company's new line of ball bearing axle load scales. Platform sizes are 4, 6 and 8 ft. in length by 10 ft. in width. A feature in the construction is the ball bearing mounting under the beams immediately supporting the platform so shock loading cannot be transmitted to the knife edges below. Seven types of load indication are available in the line. These include the full capacity beam, the type recording beam, the balance indicator, the Weightograph in two designs, the cabinet dial and the company's Teleprint.

If you write maker identify as IEN - 10547

TUBE FITTINGS . . Welded steel, for vacuum lines, 2, 2½, 3 inches

Source: H-P PRODUCTS INC.
300 Broad St., Louisville, Ohio

VacuFlo is a new line of welded steel tube fittings for use in permanent vacuum cleaning lines. The fittings feature directional design with elimination of pockets and shoulders in the T's and Y's. Three sizes, from 2 to 3 in., are carried in stock. Larger sizes can be specified.

If you write maker identify as IEN - 10548

CONVEYING . . Roller turn table to route work on conveyor cross-lines

Source: LAMSON CORP.
303-5 Lamson St., Syracuse 1, N. Y.

Specified width

An operator stands beside this new turntable, rotates it manually to receive work from one line and direct it to another. The table is mounted on inverted casters on a structural steel frame. It can be locked in place or released to turn by operating a foot pedal. The equipment is available in specified width and is designed particularly for comparatively light loads.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10549

Less Overhead When You HEAT Over Head with . . .

DUNHAM UNIT HEATERS

Why let ineffective heat distribution run up fuel bills—and overall operating expenses?

Why not look into these Dunham Horizontal Discharge Unit Heaters—see how they give you heat where you need it most . . . quietly.

Dunham's resiliently mounted motors; slow-speed fans; and sturdy one-piece fan shroud—all combine to direct air efficiently through individually adjustable louvers.

For complete information about long-lasting, expense-saving Dunham heaters, WRITE FOR BULLETIN 1301-11.

DUNHAM

C. A. Dunham Co.
400 W. Madison St., Chicago 6, Ill.
In Canada:
C. A. Dunham Co. Ltd., Toronto
In England:
C. A. Dunham Co. Ltd., London

HEATING SYSTEMS AND EQUIPMENT

If you write maker identify as IEN - 10550

B&W KAOCAST

Last 3 to 6 times longer

Used for burner blocks, B&W Kaocast stayed on the job 3 to 6 times as long as previous refractory . . . and this 3000F refractory castable is still going strong.

Kaocast is versatile, too . . . eliminates need for inventory of special shapes. It can be molded quickly by you, when you need it, directly in place or applied by cement gun. Put B&W Kaocast to work in your plant. Get all the facts from your B&W Refractories Engineer.

THE BABCOCK & WILCOX CO.
Refractories Division
GENERAL OFFICES: 161 EAST 42nd ST., NEW YORK 17, N. Y.
WORKS: AUGUSTA, GA.

R-417

If you write maker identify as IEN - 10551

IT'S SHATTERPROOF!

DOUBLE welded construction, an entirely new development in hacksaw design, gives Starrett SAFE-FLEX blades the perfect combination of hardness and toughness. The cutting edge of hard, high speed steel is reinforced with a medium hard, extra strong center and backed up with a super-tough steel back. See what the new Starrett SAFE-FLEX blade can mean to you in more and straighter cuts per blade. Order a supply today.

Starrett — THE L. S. STARRETT COMPANY, Athol, Massachusetts, U.S.A.

If you write maker identify as IEN - 10552

Are You Wasting Dollars Trying to Save Pennies On Cut-Off Jobs?

Wells No. 8 with wet cutting system.

A Wells Metal Cutting Band Saw pays for itself in savings

IT'S easy to fool yourself about costs on your cut-off jobs. Perhaps you say, "It doesn't amount to much, why worry about how we do it." You'd be surprised. Look at what a Wells Saw gives you—Modest first cost with a model for every budget . . . Rugged, heavy duty construction for minimum cost per year . . . Fast, continuous band saw cutting . . . Accurate cutting to minimize subsequent machining . . . Simple operation that requires no special skill.

To cut your cut-off costs, ask your Wells Distributor for further information or write direct.

Standard Wells Saws: No. 49A—3½" x 6½"; No. 5—5" x 10"; No. 8—8" x 16"; No. 12—12" x 16". Wet cutting systems available for Nos. 5, 8 and 12. Automatic bar feed available for Nos. 8 and 12. Special machines for capacities to 48" x 48".

Products by Wells are Practical

Wells

METAL CUTTING BAND SAWS

WELLS MANUFACTURING CORPORATION
1111 MADISON ST., THREE RIVERS, MICH.

If you write maker identify as IEN - 10553

Serving Throughout Industry...

SPECIAL WASHERS and STAMPINGS

by *Quadriga*®

Manufacturers throughout industry continue to depend on QUADRIGA for economical, precision-made washers and stampings. Do as so many others are doing—build maximum protection against noise, vibration and wear into your product. Use QUADRIGA washers and stampings. Fabricated to your exact specifications. Promptly available in any quantity.

Tension, spring, formed, drawn, cupped or finishing washers . . . stampings of all types . . . supplied in materials as specified . . . also terminal wires. Press capacity to 150 tons . . . depth of draw to 4 in. We build dies.

Send S.P. sample or data for estimate and ask for new illustrated catalog

THE QUADRIGA MANUFACTURING CO.

215A WEST GRAND AVENUE • CHICAGO 10, ILLINOIS

If you write maker identify as IEN - 10554

Don't Walk... TALK!

The NEW Executone Intercom saves steps, increases output, cuts costs!

Compute the cost of time wasted by executives and employees running back and forth. *That's how much* the NEW Executone Intercom can save you! Your voice—with lightning speed—gets information, gives instructions. Every working hour becomes more productive for you and your employees. "Inside calls" no longer tie up telephone lines. Office and plant operate at a new peak of efficiency!

Years ahead of its time in operation and design!

Executone's exclusive "CHIME-MATIC"® Signalling announces calls by chime and signal light. Calls may be answered from across the room—yet privacy is assured. New switching circuits for every need make new savings possible. Voices are clearer, distinct, instantly recognizable. Inexpensive 2 station system easily expanded. It will pay you to get the whole story. Just mail the coupon.

Executone

COMMUNICATION & SOUND SYSTEMS

GET THE FACTS

EXECUTONE, INC., Dept. J-4
415 Lexington Ave., N. Y. 17, N. Y.

Without obligation, please let me have:

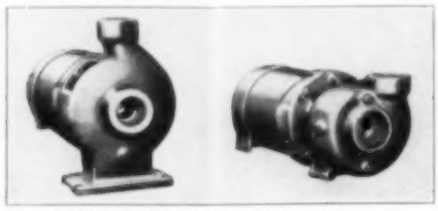
☐ The name of your local Distributor.
☐ Complete descriptive literature.

Name _____ Title _____
Firm _____
Address _____ City _____

If you write maker identify as IEN - 10556

PUMP . . Motor mounted turbine rates 5 to 150 gpm., head to 110 feet

Source: AURORA PUMP CO.
52 Loucks St., Aurora, Ill.



Operating speed is 3,500 rpm.

Two types, SAC and JMC, have been added to the company's line of turbine pumps with end intake and vertical discharge. Each pump is equipped with mounting feet and takes a flange assembled motor equipped with a stainless steel shaft. The impeller is mounted on the shaft and can be removed with the motor through the rear face of the pump housing without disturbing the pipe connections.

Twenty-nine combinations range from ¾ to 2 in. in pipe connection sizes and can be specified with single phase or three phase motor or as a pump, base and coupling unit for application with the user's motor.

If you write maker identify as IEN - 10557

CHUCK . . Three jaw universal, 6 in. size, threaded hub is integral

Source: WESTCOTT CHUCK CO.
P. O. Drawer 270-A, Oneida, N. Y.

About $56

Catalog 6907 is a new geared scroll chuck with its rear hub threaded 8 pitch, 2¼ in. for application without an adapter on any spindle carrying the same thread. Jaws, scroll and pinion are made of steel correctly heat treated for the duty each is to perform. The body is semi-steel. A steel wrench and an extra set of jaws are included.

Each chuck, when new and correctly mounted on a true spindle, is warranted to center with 0.003 in. for total indicator runout. Weight is 29 pounds. Body diameter is 6½ inches. The center hole is 1 5/16 in. in diameter. The chuck is the company's most recent addition to its line of universal and independent chucks ranging from 4 to 10-in. capacity.

Identify as IEN - 10558

Clogging due to moisture condensation inside your dust collecting equipment can be stopped by insulating the exterior with Gustin-Bacon Ultralite glass fiber material. A cement manufacturer employing this material, placed it with his own workers using an adhesive covered with chicken wire and a troweled-on mastic acting as a vapor barrier.

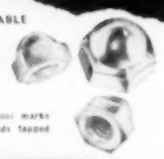
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10559

GRC ZINC ALLOY FASTENINGS

• RUSTPROOF • DEPENDABLE • DURABLE

GRC CAP NUTS



Die cast, not turned. Free of tool marks and cut-off burrs; class 2 threads tapped square with face of nut.

GRC SMALL TUBULAR RIVETS

Die cast, not headed. Closer tolerances, more uniform heads for greater riveting efficiency. Diameters up to 9/64"; lengths to 5/16".

GRC WING NUTS

Exclusive finger-tip design, easy to assemble, disassemble; brightly finished, clean threads.

GRIES die cast zinc alloy fastenings are strong, durable, rustproof, economical, too! All Gries fastenings may be used without protective finishes in most applications. Furnished in all commercial finishes when desired. Prompt delivery on standard sizes—operable to order.

WRITE TODAY FOR SAMPLES AND PRICES

GRIES REPRODUCER CORP.

797 E. 132nd St., N. Y. 54 • Phone MOtt Haven 5-7400

If you write maker identify as IEN - 10560

Make overhead space contribute to plant earnings

CAPACITIES ½ TO 5 TON

CM METEOR WIRE ROPE ELECTRIC HOIST

• SINGLE AND TWO SPEED MODELS

METEORS offer real materials handling help in many ways. Read all about their unusual operating advantages in METEOR CATALOG No. 142—also illustrates all details of suspension and construction. Prices included.

Sent on request

CHISHOLM-MOORE HOIST CORPORATION

(Affiliated with Columbus McKinnon Chain Corporation)

GENERAL OFFICES AND FACTORIES: TONAWANDA, N. Y.

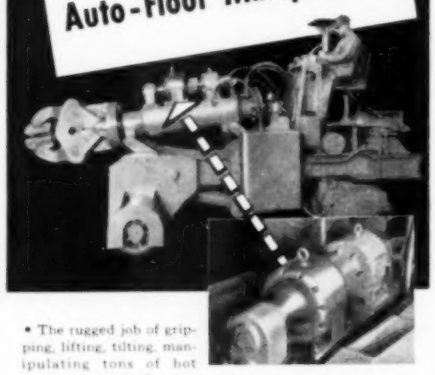
SALES OFFICES: New York • Chicago • Cleveland

If you write maker identify as IEN - 10561

under the twists and shocks of mighty hammer blows

WINSMITH SPEED REDUCERS

stand up indefinitely on Brosius Auto-Floor Manipulators



• The rugged job of gripping, lifting, tilting, manipulating tons of hot stock through forging operations and of loading or drawing furnaces—such extreme service conditions subject Brosius Auto-Floor Manipulators to a terrific beating. And day after day they take it and like it, and roll back for more!

For very good reasons, Salem-Brosius, Inc., the manufacturer, is a consistent user of Winsmith Speed Reducers for rotation of tongs heads at 22 to 24 rpm on capacities up to two tons. First, they stand up to the twist and shock of forging operations which are imparted to the spindle and transferred through the speed reducer. Second, they are compact, and being forward of the operator they do not obstruct his view of work being done.

The Winsmith (pat.) Differential Gear Reducer used on the Brosius Manipulator is unique among speed reducers. With it, in one single stage in the same housing, reduction ratios of 1.1:1 to 50,000:1 are obtained smoothly and silently—without need of extra parts.

Good to remember: within the range of 1/100 to 85 hp, Winsmith's four basic speed reducer designs—differential, worm gear, helical gear and worm-helical—provide the most complete line available from any one manufacturer.

Write for informative catalog No. 148.

Member of AGMA

WINSMITH, Inc.
10 DAVIS STREET
Springville (Erie County), N. Y.

If you write maker identify as IEN - 10563

NEW! IMPROVED!

"Columbia-Quality"

WIREWAYS

AND AUXILIARY FITTINGS

Gray Enameled or Aluminum Sprayed

Elbow

IMMEDIATE SHIPMENT FROM STOCK

Tee

Closing Plate

UNDERWRITERS' APPROVED AND LABELLED

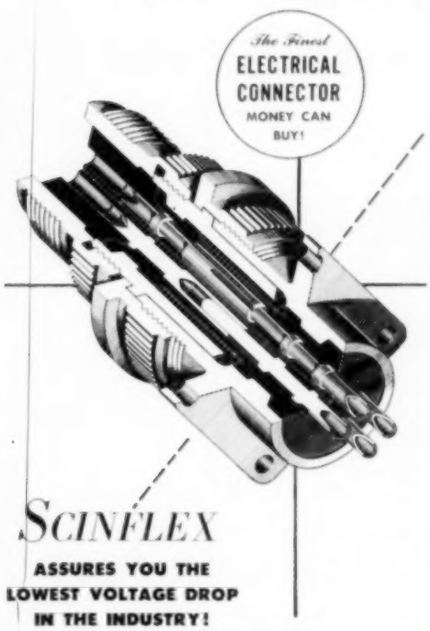
Connector

Contact your Local electrical wholesaler or jobber for circular and prices, or write

COLUMBIA METAL BOX CO.

250 EAST 143rd STREET NEW YORK 51, N. Y.

If you write maker identify as IEN - 10564



SCINFLEX

ASSURES YOU THE LOWEST VOLTAGE DROP IN THE INDUSTRY!

When operating conditions demand an electrical connector that will stand up under the most rugged requirements, always choose Bendix Scinflex Electrical Connectors. The insert material, an exclusive Bendix development, is one of our contributions to the electrical connector industry. The dielectric strength remains well above requirements within the temperature range of −67°F to +275°F. It makes possible a design increasing resistance to flashover and creepage. It withstands maximum conditions of current and voltage without breakdown. But that is only part of the story. It's also the reason why they are vibration-proof and moisture-proof. So, naturally, it pays to specify Bendix Scinflex Connectors and get this extra protection. Our sales department will be glad to furnish complete information on request.

• Moisture-Proof • Radio Quiet • Single Piece Inserts • Vibration-Proof • Light Weight • High Insulation Resistance • High Resistance to Fuels and Oils • Fungus Resistant • Easy Assembly and Disassembly • Fewer Parts than any other Connector • No additional solder required.

BENDIX SCINFLEX

ELECTRICAL CONNECTORS

Bendix

SCINTILLA MAGNETO DIVISION of SIDNEY, NEW YORK

Bendix AVIATION CORPORATION

Export Sales: Bendix International Division, 72 Fifth Avenue, New York 11, N. Y.

FACTORY BRANCH OFFICES: 118 E. Providencia Ave., Burbank, Calif. • Stephenson Bldg., 6560 Cass Ave., Detroit 2, Michigan • Brouwer Bldg., 176 W. Wisconsin Avenue, Milwaukee, Wisconsin • 582 Market Street, San Francisco 4, California

If you write maker identify as IEN - 10566

TRUCK . . Electric platform unit for loads to 18 ton in general duty

Source: YALE & TOWNE MFG. CO.
11002 Roosevelt Blvd., Philadelphia 15, Pa.

For the big loads

Load Carrier designates a new truck with a wood decked steel platform and load anchoring strap holes along the sides. Coupling equipment is included at the front and rear for use in towing duty. Wheel base measures 78 inches. Overall width and length are 72 and 148 in. for the new unit.

The truck will operate in minimum intersecting aisles 121 in. in width. It will make a right angle turn in a 240-in. aisle. It is equipped with four-wheel power steering and operates equally well in either direction. It can be supplied for either battery or Ready Power generator.

If you write maker identify as IEN - 10567

PUMP . . Centrifugal for coolants, 1/30 hp. motor, hose and nozzle

Source: FACTORY TOOLS INC.
4704-8 W. Arthington St., Chicago 44, Ill.

List price is about $35 for this new combination of centrifugal pump, adjustable mounting legs, direct connected sealed motor, 4-ft. length of flexible metal hose and flow adjusting nozzle. Also included is a 6-ft. extension cord with a switch and connection plug for operation on 110-volt ac. The pump mounts on three adjustable legs so it can be set at a required height above the bottom of a bucket or container.

If you write maker identify as IEN - 10568

DEMAGNETIZING . . Hand tool for use on tools, dies, work pieces

Source: ENCO MFG. CO.
4520 W. Fullerton Ave., Chicago 39, Ill.

List is $10.50

Miti-Mite No. 500 is a new hand held demagnetizer that connects to a 110-volt ac. power source and includes a push button switch to open and close the circuit. Pressing the switch closes the circuit and sets up a field in the tool that neutralizes magnetism as the contacts are moved over the work piece surface. Assembly is in a molded plastic housing measuring 4 by 1¾ by 1⅝ inches. The extension cord measures 6 ft. in length. It is oil resistant and is equipped with a rubber plug.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

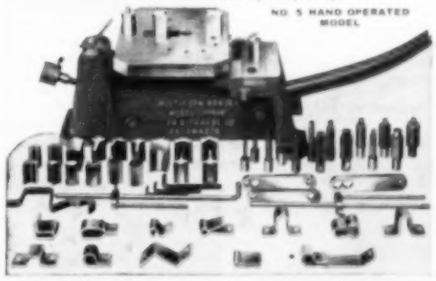
If you write maker identify as IEN - 10569

THE FAMOUS MULTIFORM BENDER CUTTER

Produces Without Special Tooling • Saves Die Costs Saves on Expensive Presses

The illustration at the left shows just a few pieces produced on our famous Multiform Bender-Cutter. This efficient machine is useful in all lines of trade, Spring Plants, Radio, and Electrical Equipment Manufacturers, complete with tooling for bending material up to ¼" × 1½"

NO. 5 HAND OPERATED MODEL



FIVE-IN-ONE-TOOL — ALSO LARGER MODELS

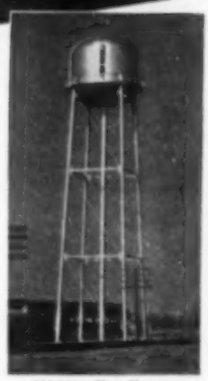
Air Operated Models in this and Larger Sizes Available

IT BENDS FLAT AND ROUND STOCK INTO ANY SHAPES, CUTS AND PUNCHES FLAT STOCK

J. A. RICHARDS CO. 907 NORTH PITCHER ST. KALAMAZOO 60F, MICH.

If you write maker identify as IEN - 10570

80 Per Cent REDUCTION in Fire Insurance Rates



100,000-gallon Horton ellipsoidal-bottom tank

A 100,000-gallon Horton elevated tank and an automatic sprinkler system reduced fire insurance rates 80 per cent on contents, in addition to reductions on general property premiums, at the Texas plant of the Wichita Falls Compress Co., Inc.

A Horton elevated tank can protect your property with a gravity fed water supply that's always ready for emergencies. Tanks are available in standard capacities from 5,000 to 3,000,000 gallons. When requesting quotations, state capacity required, dimensions and location of tank.

CHICAGO BRIDGE & IRON COMPANY

2123 McCormick Building • Chicago 4, Illinois

Atlanta • Birmingham • Boston • Cleveland • Detroit • Houston
Los Angeles • New York • Philadelphia • San Francisco
Seattle • Tulsa • Washington, D. C.

Plants in BIRMINGHAM, CHICAGO, SALT LAKE CITY and GREENVILLE, PA.

If you write maker identify as IEN - 10571

Simplify any work holding operations with ClampAirs

Whether you want a bulldog grip or a gentle one, you'll find the answer in Schrader ClampAir cylinders. ClampAirs eliminate time-consuming hand clamping and rejects caused by an improper holding force.

Write for more information on how the versatile ClampAir can be used in your plant. Full line catalog gives all the data on Schrader ClampAirs as well as other numerous Schrader Air Control Products.

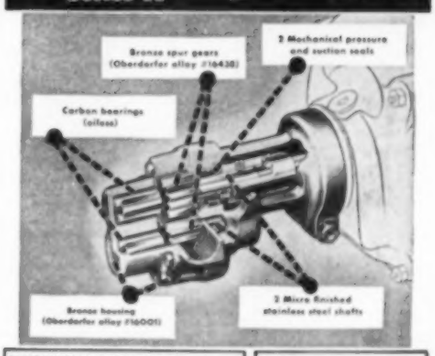
A. SCHRADER'S SON

Division of Scovill Manufacturing Company, Incorporated

458 Vanderbilt Ave., Dept. D-38, Brooklyn 17, N. Y.

If you write maker identify as IEN - 10572

INTERNATIONAL Series II BRONZE PUMPS



DIMENSIONS & PRICES — Pump only				
Pump No.	Ht.	Width	Lgth.	Price
1½ CCC	2⅞"	2 11/16"	4⅝"	$20.00
2 CCC	2 11/16"	2⅝"	4¼"	22.50

Complete units with ⅙ hp. 110 volt AC thermal overload motors (motor standard, but specially machined for pump mounting) . . . prices on request.

See our catalog in Sweet's File for PRODUCT DESIGNERS

CAPACITIES — Gal. per min. 1725 rpm — lbs. sq. in.		
Press.	1½ CCC	2 CCC
0 lbs.	2.00 gal.	4.00 gal.
25 lbs.	1.83 gal.	3.67 gal.
50 lbs.	1.67 gal.	3.17 gal.
75 lbs.	1.58 gal.	2.83 gal.
100 lbs.	1.50 gal.	—

Oberdorfer Foundries, Inc., Ind. Pump Div.
1123 Thompson Rd. Syracuse, N. Y.

If you write maker identify as **IEN - 10573**

BETTER SEEING TOOLS FOR INDUSTRY

Light the Vital Seeing Zone
on Machine Tools, Inspection and Assembly Benches

MODEL 3267-H-174

$6.12 EACH
in pkg. of 6
Single Units
$7.65 ea.

Overall length 32¾". Three instantly adjustable joints. Flat oblong base for machine screw mounting.

- **Rugged Construction** withstands vibration and rough handling
- **Instantly Adjustable** with flexible ball and socket joints
- **Baked Enamel Finish** — Exterior, Smooth Gray — Reflector Interior high temperature White
- **Reflector** accommodates 100 watt or any A-19 or A-21 medium screw base lamp
- **Wired Complete** with switch socket and 8 ft. oil resistant cord and moulded plug

WRITE FOR COMPLETE CATALOG of Localite models with various type reflectors, arms and bases for every industrial use.

LOCALITE Fostoria — for Light ON the Job

THE FOSTORIA PRESSED STEEL CORPORATION
FOSTORIA, OHIO

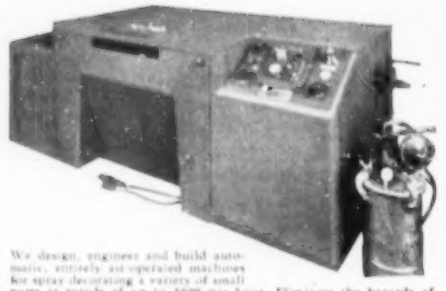
Localites are available through electrical wholesalers everywhere.

If you write maker identify as **IEN - 10574**

Cut spray decorating costs by rapidly wet painting three-dimensional parts, one color after another, through the use of

ELECTRO-FORMED METAL SPRAY PAINTING MASKS
(Made by Patented Process)

and foot treadle air-operated clamps, fixtures and tools which position and hold the piece snugly in the mask; and permit the operator to use both hands.
Plug-type masks for keeping depressed areas clear, while spraying background; lip-type masks for protecting the background while painting depressed areas; and block cutout plane surface type masks.
Clean, sharply defined letters and decorative effects are obtained on intricate die castings, stampings and plastic forms by accurate control of painted areas with no fogged edges. After-wiping or buffing off of overspray is unnecessary. The "loose" inside of letters and numerals, such as "O" and "6," is held in position by arched bridging to eliminate objectionable "ties."



We design, engineer and build automatic, entirely air-operated machines for spray decorating a variety of small parts at speeds of up to 3600 per hour. Eliminate the hazards of electric motors, mercury or solenoid switches and the cost of explosion proof electrical equipment.
Masks are inserted so as to be flush with top of the working table. Spraying is from below. Frequency of mask cleaning greatly reduced. Dial regulates the cycling speed. Using a conveyor belt, operator can use both hands to load. Another dial regulates the amount of paint sprayed. At any given setting, the same amount of paint is sprayed on every part, regardless of the speed of the loading cycle. Effects paint savings of up to 50 percent over hand spraying.
Employs 8 latest automatic guns and two 2 gallon air-agitated paint pressure tanks with four insert containers.
We also build mask washing equipment.

Send Coupon Now!

CONFORMING MATRIX CORPORATION
330 Toledo Factories Bldg. Toledo 2, Ohio

Please send without obligation, details on ☐ Hand masks; ☐ Mechanical masking fixtures; ☐ Air operated masking fixtures; ☐ Stationary automatic spray painting masking machines; ☐ Rotary table automatic spray painting masking machines; ☐ Mask washing equipment; ☐ Quotation on masks for parts (or prints) which I am forwarding.

Name ....
Firm ....
Street ....
City .... State ....

If you write maker identify as **IEN - 10576**

FUSE . . Double element unit protects small motors against burn-out

Source: BUSSMANN MFG. CO.
2538 W. University St., St. Louis 7, Mo.

Illustrated details in Form SRCS

New combinations are announced for the company's Fustat in box cover assemblies, previously described IEN-8850-51. The four new units in the line are shown in the illustration. They include covers 4 in. in diameter, 4-in. square, 2¼ and 2¾ in. in width.

On each unit a grounding type plug-in receptacle is in series with the holder for the Fustat. The receptacle will take either the two prong attachment plug cap or the two prong parallel polarized attachment plug cap, that has one wide prong, or the three prong grounding type attachment plug cap. An Edison base holder is employed so any unit can be made to take the right size Fustat by inserting an adapter.

Two elements in the fuse assembly include a link which handles overloads above 500 per cent and a thermal cut-out for light overloads under this amount. The fuse link will not open on any but the very heavy overloads so it will carry a motor starting current. The thermal cutout must melt solder before it can open so it is not affected by momentary overload.

If you write maker identify as **IEN - 10577**

WRENCH . . Non-sparking design for pipe, replaceable tooth inserts

Source: AMPCO METAL INC.
1743-47 S. 38th St., Milwaukee 46, Wis.

Made of non-ferrous metal

Type W-213 is new design of the company's 18-in. non-sparking non-ferrous wrench in which a new upper jaw design carries the same tooth insert as in the lower jaw. The new style makes it unnecessary to purchase an entirely new upper jaw at its normal list price of $10.60. Replaceable inserts cost $1.90.

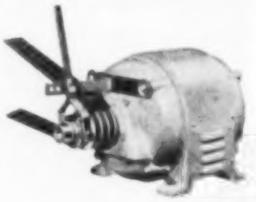
Complete replacements can be obtained for 18-in. wrenches now in service by sending for "B" upper jaws assembled with the new style insert at the regular $10.60 price. Thereafter only inserts need be purchased.

Identify as **IEN - 10578**

Loaded pallets ride easily in and out of storage racks on tracks made of structural T-members. Their center flanges face upward to carry double rows of ball bearing wheels similar to those employed on roller skates. Harry J. Ferguson Co. devised the track in connection with its manufacture of engineered conveyor equipment.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 10579**



ball-lok V-Belt Clutch

Hi-speed V-Belt Drive

BALL-LOK CLUTCHES are designed for direct mounting on any gasoline engine, electric motor or line shaft. Movable sheave sides grip V-belt to give positive shockless lock. Ball-Lok Clutches will not grab—release instantly. Smoother running and idling at high speeds. No adjustments. No wearing parts. Belt-life is prolonged.

Intermittent and hi-rate-per-hour engagements by solenoid, air or cam actuation handled without heating, wear or shock. Send us your timed control problems.

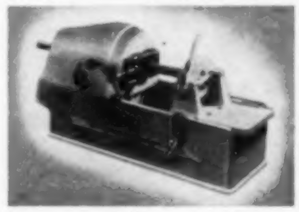
For safety plus carefree economical clutching, use Ball-Lok Clutches. Fractional to 10 horsepower.

Write for Bulletin

V-Belt Clutch Co.
418 N. WESTERN AVE., LOS ANGELES 4, CALIF.

If you write maker identify as **IEN - 10580**

World's Fastest Pipe, Bolt and Conduit Threader Weighs Only 160 lbs!



Quijada Chief with Automatic Chuck will increase your production with far less operator effort, yet it's easily portable—use it anywhere, IN the shop or ON the job.

No more wrestling with stubborn chucks, no wrenches to worry about—now, with Quijada's patented Automatic Chuck you just flip a switch and four jaws front and rear instantly and automatically grip, center and turn pipe...another flip and pipe is released. Quick-Opening die heads give operator accurate control over thread lengths and eliminate back-off. Die head change is effortless and quick. Easily removable wheel type cutter is mounted on front jaw housing out of the way, thus the Chief is ideal for make-up and nipple work. Flat blade reamer attached to die head reams as you thread. Exclusive telescoping shaft eliminates outside oil hose line.

The Quijada Chief is a rugged, production machine built and guaranteed by

QUIJADA TOOL DIVISION OF **GAINES-COLLINS**
5474 Alhambra Ave., Los Angeles 32, Calif.

Manufacturers of Automatic Threaders and Cutters for more than a Quarter Century

• Write today for new catalog IE-9

If you write maker identify as **IEN - 10581**

Johnson Flexible Seamless Metal HOSE

For
conveying under pressure or vacuum
Steam-Oil-Water-Gas-Refrigerants

Ask for Bulletin J-3

Deep convolutions provide for extreme flexibility.

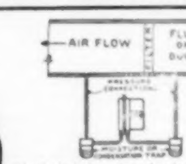
Made of brass, bronze, carbon steel, stainless steel alloys.

Standard or special fittings available for hot or cold service.

JOHNSON METAL HOSE INC.
P. O. Box 952 Waterbury 20, Conn.

If you write maker identify as **IEN - 10582**

CONTROL FROM MINUTE CHANGES IN THE RELATION-SHIP OF TWO PRESSURES



Illustrated above is a standard application whereby the Type PPQ functions to open (or close) an electrical circuit from a variation in pressure differential due to a clogging filter.

Mercoid Type PPQ Diaphragm Differential Pressure Controls operate from minute changes (.03" water) in the difference between two pressures.

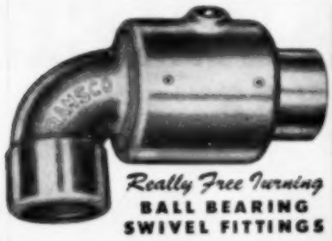
Ranges to cover most applications (inches of water) 6" vacuum to 6" pressure, and 30" vacuum to 30" pressure. Available for various circuit arrangements.

Electrical Capacity—0.3Amp. at 115V., A.C. or 0.15 Amp., at 230V., D.C. Can be furnished in explosion-proof or weather-proof cases.

WRITE FOR BULLETIN CA-3P

THE MERCOID CORPORATION
4205 W. BELMONT AVENUE, CHICAGO 41, ILLINOIS
New York: 205 East 42nd St. Philadelphia: 3137 N. Broad St.

If you write maker identify as IEN - 10583



Really Free Turning
BALL BEARING SWIVEL FITTINGS

RAMSCO

FOR LIQUID GASES, STEAM, AND CHEMICALS, HOT OR COLD SERVICE. CONTINUOUS OR OCCASIONAL ROTATION.

360° FREE ROTATION—1, 2 AND 3 PLANES FITTINGS AND PRESSURES TO 15,000 P.S.I. AND TEMPERATURES TO 750° F.

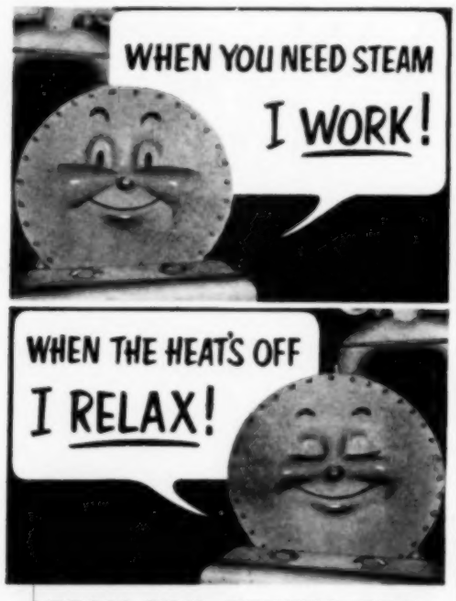
Over 500 sizes, types, styles. Low pressure fittings ⅜" to 14". High pressure and high temperature ⅜" to 6". Universal service (U. S. type) fittings and pressures to 1,000 psi. Temperatures to 750° F. asbestos packed. When packed with Teflon ideal for corrosive service. Gear driven types for loading racks also available.

Send for complete catalog and prices. State kind of service, pressure, temperature, pipe size and indicate style at right, threaded, flanged or weld ends.

RAMSCO

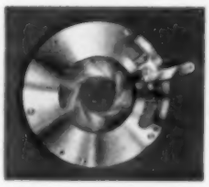
RASMUSSEN MFG. CO.
12305 INDUSTRIAL AVENUE
HOLLYDALE, CALIFORNIA

If you write maker identify as IEN - 10584



STEAM-PAK GENERATORS AUTOMATICALLY REGULATE OPERATION TO LOAD DEMAND

Steam-Paks, the modern steam generators, built by York-Shipley, regulate themselves automatically by load demand, furnishing steam or hot water when required. The Iris Shutter air control (upper right) and Metering Oil Pump (lower right) supply the correct amount of air and oil as required by load demand. This means highest combustion efficiency, lower operating costs. Steam-Paks cover the full range from 15 to 300 hp. for low or high pressure steam or hot water and are fired by oil, gas, or a combination of oil and gas.



GET YOUR COPY OF THIS MANUAL TODAY!

"Steam in a Package" — a 14 page book which tells the installation and operating advantages of York-Shipley Steam-Pak Generators. Write today for your free copy of Bulletin 201.

YORK-SHIPLEY, INC., YORK 13, PA.

If you write maker identify as IEN - 10586

SWITCH . . Miniature toggle unit, silvered contacts, rates 10 amperes

Source: METHERINGTON INC.
1214-18 Elmwood Ave., Sharon Hill, Pa.

Good for appliances

Series T-1000 is a new aviation type miniature toggle switch that conforms with MIL-S-6745 specifications. It is available in single-pole double-throw design with maintained or momentary contacts in any of four circuit arrangements. Operation is by cam roller snap action.

The contacts wipe to keep them clean and the snap action breaks any contact welding that may result from an accidental overload. A spacer prevents arcing between terminals. Assembly is in an anodized aluminum housing with plastic interior.

If you write maker identify as IEN - 10587

GAGE . . Nickel plated tape and container, 25 to 100 ft. lengths

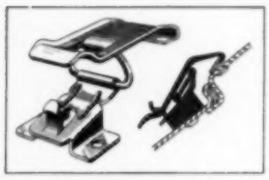
Source: LUFKIN RULE CO.
1948 Hess Ave., Saginaw, Mich.

Royal Ni-Clad is a new nickel plated steel tape that winds into a container. It carries black markings that stand out in clear contrast against the bright nickel background. The rust resistant metal case liner is covered with dark green Vinyl plastic. The winding handle folds flush and is opened with a push pin. Four lengths range from 25 to 100 feet. List is $3.50 to 6.50.

If you write maker identify as IEN - 10588

FASTENING . . Spring latch locks over tab on hinge member

Source: TINNERMAN PRODUCTS INC.
Box 6688-A, Dept. 14, Cleveland 1, Ohio



Lift to release

New latch has been added to the company's Speed Nut fastening line. It is designed for rivet assembly on a metal box or container. It consists of a latch member, an anchoring hinge member and a connecting wire ring. The latch measures ¾ in. in width by about 2 ⅛ in. in length. Overall width of the hinge across its base is 1⅝ inches. Downward pressure on the finger grip end of the latch snaps it over the sheared and formed tab on the hinge to lock in closed position.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80

If you write maker identify as IEN - 10589

The HANDY KNURLER

Save set-up time, operations and parts...Use Handy Knurler for individual knurling jobs —also for certain types of production work.

HAND OPERATED LIKE A PAIR OF PLIERS

HANDY KNURLER is used with lathe or drill press. Or hold work in vise and rotate Knurler around it. Concentric and off-center surfaces knurled with precision. Worn and undersized armature shafts, axles, spindles, pins enlarged to permit parts to be re-used. Knurled surfaces may be machined. Deep-Cut grooves retained to hold lubricants.

★ Quality heat-treated steel, blued for rust-protection. No other tool like it. Knurler complete with set of 3 knurl rollers for medium diagonal patterns $12.50 postpaid. Different patterned rollers—$3.60 for set of 3. Order direct, or write for literature.

Dealer inquiries invited

M.P.A. CO., 1678 W. 17th PL., LOS ANGELES 6, CALIF.

If you write maker identify as IEN - 10590

Commander TAPPER

★ Wider Range...1 Tapper Handles #0 to ¾" Taps

★ Automatic Tap Protection

★ Furnished to fit any Drill Press

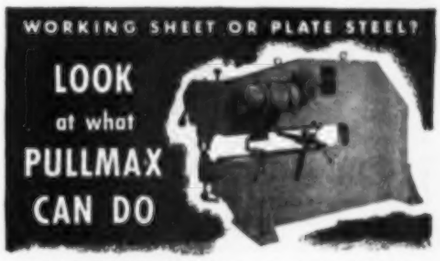
Commander—"The Tapper That Thinks For Its Operator," has the adjustable full range torque control that instantly stops any tap when it becomes dull, loaded, strikes a hard spot or bottoms in blind hole tapping. Assures maximum tap protection, higher production, even with inexperienced operators.

Your nearby Commander Distributor can give you a demonstration in your own plant. Write for his name and a copy of the NEW Commander Full Line Catalog #851

COMMANDER MFG. CO.
4219 W. Kinzie St. Chicago 24, Ill.

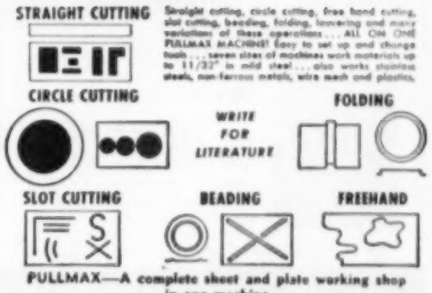
Product of *Commander*...Builder of Production Tools

If you write maker identify as IEN - 10591



STRAIGHT CUTTING

Straight cutting, circle cutting, free hand cutting, slot cutting, beading, folding, lanancing and many variations of these operations . . . All ON ONE PULLMAX MACHINE! Easy to set up and change tools . . . seven sizes of machines work materials up to 11/32" in mild steel . . . also works stainless steels, non-ferrous metals, wire mesh and plastics.



PULLMAX—A complete sheet and plate working shop in one machine

AMERICAN PULLMAX CO., INC.
2460 N. SHEFFIELD AVENUE • CHICAGO 14, ILLINOIS

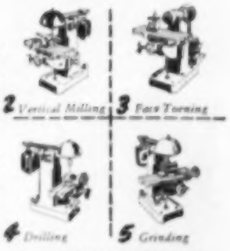
If you write maker identify as IEN - 10592

One BENCHMASTER ANSWERS Five EVERY-DAY SHOP REQUIREMENTS

Your little Benchmaster pinch-hits for almost any tool in the shop, saving time, eliminating the need for extra machines, cutting your costs to the bone.

1 *Horizontal Milling*

With its two interchangeable spindles, Benchmaster mills both HORIZONTALLY and VERTICALLY, serves as a GRINDER, DRILL PRESS or LATHE. In fact, BENCHMASTER is almost a complete shop in itself!



2 *Vertical Milling* 3 *Face Turning* 4 *Drilling* 5 *Grinding*

Good, husky spindle construction with Timken Tapered Roller Bearings is one answer to Benchmaster's extra versatility. Built to .001" tolerance, Benchmasters are precision fitted in every part, assuring surprising accuracy and metal-removing ability —whether it's *milling, drilling, turning or grinding!*

GET THE FACTS ON BENCHMASTER NOW!
Write Dept. IEN for circular.

benchmaster MANUFACTURING COMPANY 1835 W. Rosecrans Ave. Gardena, California

If you write maker identify as IEN - 10593

American Optical

SPEEDS PRODUCTION

with "The right file for the job"

LATHE FILING
housing part of Micro-Surfacer with Nicholson Long Angle Lathe File

In the American Optical Company's recently developed Universal Micro-Surfacer, new heights of accuracy and speed are attainable in the production of prescription optical lenses.

Properly shaped, accurately cut, uniformly hardened regular and special files are necessary for many of the hand finishing and fitting operations in its construction and that of other American Optical products.

Does the manufacture of your products call for fast or precision filing . . . on brass, aluminum, babbitt, plastics, stainless steel, die or foundry castings, lathe work? Nicholson has *The right file for the job* in the highest quality.

NICHOLSON FILE COMPANY
22 Acorn Street, Providence 1, R. I.
(In Canada: Port Hope, Ont.)

NICHOLSON
A file for every purpose
SOLD THROUGH INDUSTRIAL DISTRIBUTORS

If you write maker identify as IEN - 10594

JOY
WL-80
"UNITAIR"

the Compressor of 1000 uses
81 to 640 CFM

- ★ A size for every standard motor rating
- ★ Air cooled . . . Two stage
- ★ Force-feed lubrication
- ★ Small floor-space requirements

Write for this FREE HELP!

New 16-page Bulletin A-56—has complete details and a Selector Chart to help you choose the right compressor for your needs.

Consult a Joy Engineer W-AD-15087

JOY MANUFACTURING CO.
General Offices: Henry W. Oliver Building
Pittsburgh 22, Pa.
IN CANADA: JOY MANUFACTURING CO. (CANADA) LIMITED
GALT, ONTARIO

If you write maker identify as IEN - 10595

ANGLE STEEL STOOLS

RUGGED-Smooth, with ADJUSTABLE BACK REST TO FIT WORKER

•Years of designing and manufacturing experience stand back of Angle Steel's rugged industrial stools. Perfect rigidity is engineered into all varying models and designs. All stools have Angle Steel's riveted construction. Legs have ball-type feet for solid footing and easy sliding. Available in various heights. Finished in Olive Green, Angle Steel Gray or School Brown baked enamel. Choice of wood or steel seats. Wood seats and backrests in natural finish.

Helpful literature . . . FREE

ANGLE STEEL, Inc.
Dept. 3 Plainwell, Michigan

SEND FREE Literature . . . we're interested in: Benches Machine Tender Trucks Stools

Company

My Name Title

Address

If you write maker identify as IEN - 10596

REFRIGERATING . . Chilling equipment cools and circulates processing liquid

Source: **BRUNNER MFG. CO.**
Broad & Utica Sts., Utica 1, N. Y.

It produces "fluid cold"

Heat exchanger plates made of copper are positioned at intervals in a copper lined tank and are individually connected to motor driven refrigerating equipment. This equipment is located on the tank or beside it depending on size in the line of 11 units. Motor rating is between ¼ and 7½ hp. in complete assemblies. Larger sizes to 25 hp. are included in the line. The 7½-hp. unit will make 4,960 lb. of usable ice in a 24-hr. period and rates 763,000 btu. or 45,600 btu. per hour. The housing measures 180 by 52 by 53 in. over its insulated 16-gage galvanized steel exterior. Finish is in aluminum paint.

Liquid to be cooled travels about 90 ft. to move through the unit, back and forth over ice that is formed on the plates and through ice filled channels. The ice builds up during intervals of low heat exchange demand to provide for peak operation at intervals. Intended application is in any plant where chilled water or liquid is employed for drinking or process or service application.

If you write maker identify as IEN - 10597

ELEVATOR . . Hydraulic power unit for steel sheet piler rating 20 ton

Source: **WEINMAN PUMP & SUPPLY CO.**
315-19 S. Main St., Dept. H, Pittsburgh 20, Pa.

Specified design

Two rotary pumps operate simultaneously in this new 600-gpm. 250-lb. hydraulic power unit to raise and lower a sheet piler through a total vertical lift of approximately 11 feet. The piler has a platform measuring 6 ft. in width by 15 ft. in length and rates a 20-ton load. The power unit delivers through solenoid valves to 17¾-in. vertical single acting cylinders employed in pairs, each pump in the unit applying pressure to one pair. Assembly is on a fluid tank that supplies and receives fluid return in a closed circuit.

Identify as IEN - 10598

New grade of carbide, known as S-6, has been announced by Greenleaf Corporation for machining operations on armor plate, rough steel forgings, castings, particularly on work that involves slow speed and interrupted cuts. It is suited for use on old or slow-speed machines with the feed set heavy.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10599

INDUSTRAL DERMATITIS CONTROL AND PLANT SANITATION

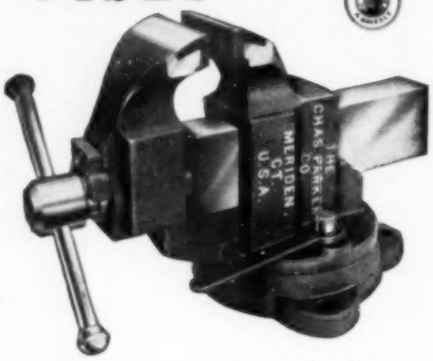
A New Free Bulletin for Safety & Sanitary Engineers

- This bulletin describes new methods to control Industrial Dermatitis from cutting oils and process materials.
- Gives positive plant sanitation methods to protect health.
- Explains Odor-Control that deodorizes and disinfects without leaving the slightest odor itself. New and better sanitation in locker rooms, rest rooms and plant restaurants. All developed from 25 years of successful specialization in this field.
- Describes causes of Industrial Dermatitis. Discusses cutting oil infections, odors and oil sludge. Tells how to stop at the source.
- Contains data on preservation of process materials in metal-working, ceramic and general manufacturing plants.
- Gives important pointers on Industrial Sanitation, disease and odor prevention. Many helpful hints. Hundreds now using these safe methods.
- *Safety Engineers, Sanitary Engineers* write for this Bulletin now! Use it for handy reference in your plant Safety, Health and Sanitation. It is yours for the asking.

THE NATRIPHENE COMPANY
424 BOOK BUILDING • DETROIT 26, MICHIGAN
Serving Industry For 25 Years—A Truly Specialized Service

If you write maker identify as IEN - 10600

PARKER
VISES



The Complete Line

Write for catalog

Machinists • Top Swivel Jaw
Combination Pipe • Hinge Pipe
Woodworkers • Utility

STOCKED BY DISTRIBUTORS EVERYWHERE

THE CHARLES PARKER CO., MERIDEN, CONN.

If you write maker identify as IEN - 10601

All the **POWER** *You Want In an* **ARMS LENGTH**

* *Only 27¾ Inches Longer than the Load*

MODEL PAL

Think of it—in only 27" is packed the complete power unit for the "Walkie" type lift truck. *Other models are only 23¾" . . . That's space efficiency . . . plus!

If you have a material handling problem that requires minimum "operation area", ask about the "Walkie" MOTO-TRUC. Its application in close areas is making history every day . . . write for complete information on all the advantages of MOTO-TRUC.

Representatives in Principal Cities

The MOTO-TRUC Co.

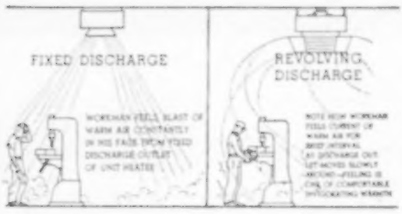
1987 E. 59th STREET • CLEVELAND 3, OHIO

PALLET . . . PLATFORM . . . HI-LIFT TRUCKS

LARGEST EXCLUSIVE MANUFACTURER OF "WALKIES"

If you write maker identify as IEN - 10603

WHY REVOLVING HEATERS CAN SOLVE YOUR HEATING PROBLEMS

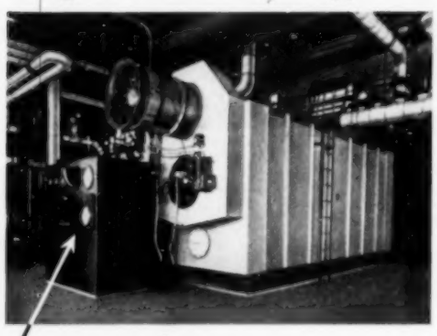


WING REVOLVING UNIT HEATERS are successfully solving the heating problems of thousands of industrial plants today because they assure a uniform comfortable temperature throughout, with no hot blasts, no cold spots, no chilly corners. Instead of annoying hot blasts, the worker is conscious only of a pleasing sensation of fresh, live invigorating warmth . . . and in Summer, with the steam turned off, these revolving "heaters" become an equally effective cooling system. *Write for Bulletin HR 6.*

L. J. Wing Mfg. Co. 160 Vreeland Mills Road Linden, New Jersey

If you write maker identify as IEN - 10604

shop-assembled Integral-furnace boiler, type FM



starts at the flip of a switch

Automatic, efficient boiler operation with complete safety is assured by the positive dual control system offered with the B&W FM Boiler.

After the usual service operations are performed—water, fuel, and electric power turned on—a flip of a switch sets the starting program controller in operation and, in a matter of seconds, your FM Boiler is started.

Not only that! During the start-up, your FM Boiler is protected by sensitive safety devices, available with this unit, that automatically shut down your FM Boiler at the first detection of even slight malfunctioning. These electrical "policemen" act faster than an operator in case anything unusual happens—as it sometimes does with any boiler.

After your FM Boiler is started and is up to pressure, an automatic control not only provides fuel feed as required but also proportions fuel and air for best performance, all under control of safety devices.

When load conditions are so light that your FM Boiler must operate below about 25% of rated capacity—always a troublesome condition—an ON-OFF control is available to smoothly and safely start and stop the boiler automatically on the proper cycle to keep steam pressure within desired limits.

Boiler feedwater also is regulated automatically by a sensitive thermo-hydraulic control system which keeps in step with steam demand.

Full details about shop-assembled FM Boilers with steam capacities of 2900 to 28,000 lb per hr are given in Bulletin G-76. Write for it! *The Babcock & Wilcox Company, Boiler Division, 161 East 42nd St., New York 17, N. Y.*

BABCOCK & WILCOX BOILER DIVISION

G-566

If you write maker identify as IEN - 10606

VIBRATING . . Pneumatic unit with clamping head for wood or metal

Source: CLEVELAND VIBRATOR CO. 2736 Clinton Ave., Cleveland 13, Ohio

Connects to shop airline

New design of the Type-VG Vise Grip vibrator, previously described IEN-1742-50, now includes a base to permit bench mounting. The vibrator is supplied with a knee operated valve known as Type J. It is made of brass and equipped with a changeable Neoprene seat and with a sponge rubber pad for the operating plate. Work that requires vibrating can be clamped between the jaws at the opposite end of the assembly. The unit also can be employed, as in its original design, clamped to a stud or beam on the side of a bin or hopper to promote materials flow.

Area of the clamping jaw is 7½ square inches. Opening is to 3¾ inches. Overall length of the assembly is 8½ inches. Width is 5⅛ in. and height is 3 inches. Two sizes employ 1¼ and 2 in. pistons. Weights are 11 and 21 pounds.

If you write maker identify as IEN - 10607

SLIP PROOFING . . Floor wax for foot gripping film on asphalt tile

Source: CONTINENTAL CAR-NA-VAR CORP. 1751-55 E. National Ave., Brazil, Ind.

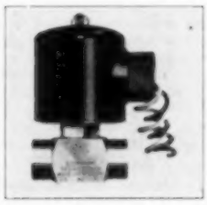
Packaged in 5 to 55 gallon drums

Grip-Kote is a new floor finishing material containing enough carnauba wax for buffing, together with other ingredients that produce a non-sticky but foot-gripping film. The wax dries in 20 min. and finishes to a hard high gloss, particularly on asphalt tile. Co-efficient of friction is 72 per cent, well above that considered to be safe against slipping.

If you write maker identify as IEN - 10608

VALVE . . Solenoid operated needle design for liquids and gases

Source: A-P CONTROLS CORP. 2448-52 N. 32nd St., Milwaukee 10, Wis.



Lifts to open

Model 67 is a new solenoid operated needle valve. It is supplied with a resilient synthetic disc type needle seating against a stainless steel orifice for positive shutoff. It is available also with a stainless steel needle and stainless steel seat for continuous duty over long periods. Two body styles apply on ⅜-in. pipe or ½-in. tube. Liquid handling capacity is 13 gpm. Current characteristics of the solenoid are subject to specification. Standard assembly is for 150-volt 60-cycle ac.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10609

A PAID NEWS ADVERTISEMENT BY THE VOL-U-METER COMPANY

Tumbler for Fibre Drums made in single and dual units

VOL-U-METER

The machine shown here tumbles fibre drums at an approximate speed of 45 r.p.m., using a ¾ H.P. motor on the dual and a ½ H.P. motor on the single unit.

Containers of the same diameter but different heights can be handled by using a spacer at end of shorter drum. If preferred cages for two different drum diameters can be supplied with the dual unit. The loading skids are optional and extra.

Use of a rectangular cage amply supports the drum and protects it against both side and end injury. One side of cage is removable for loading.

THE VOL-U-METER COMPANY
BUFFALO 16, N. Y.

If you write maker identify as IEN - 10610

STEEL SASH *Can Be Saved at Low Cost*

From a simple job of reglazing or repainting to a major repair of badly warped or bowed sash, Tremco methods substantially cut maintenance costs.

TREMCO MEN "KNOW-HOW"

makes possible effective results at substantial savings. Tremco Man J. L. Fahey expertly planned this low-cost sash saving job for Eberhard Faber Rubber Co., Newark, N. J. A trained Tremco Man like him is located near you.

Costly to replace rusted and bowed steel sash was saved by welding in new members. Warped ventilators were tightly fitted, using Tremco's low cost methods. Complete re-setting of glass was avoided by Tremco "needle glazing". Painting with Tremco anti-rust compounds stopped further deterioration. Result: Weather-tight windows and improved appearance at a substantial savings. There is no obligation for Tremco Man inspection and advice. The Tremco Manufacturing Company, Cleveland, Ohio, or The Tremco Manufacturing Company (Canada) Ltd., Toronto.

THE **TREMCO** MANUFACTURING CO.
CLEVELAND, OHIO
Products and Methods for Building Maintenance

If you write maker identify as IEN - 10611

COCHRANE MULTIPORT DRAINERS

This consistently popular drainer is used for removing large quantities of condensate from evaporators, heaters, separators, coils, etc. under vacuum or positive pressures up to 200 lbs. per sq. in.

COCHRANE CORP., 3152 N. 17th ST., PHILADELPHIA 32, PA.

COCHRANE

If you write maker identify as IEN - 10612

HALLOWELL'S New "640" Series

3 BASIC MODELS for your convenience

UNIT work benches

Multiple Unit design enables you to *custom build* HALLOWELL Unit Work Benches to fit your requirements. Standardized construction permits individual or continuous bench installations . . . provides interchangeability with existing HALLOWELL Work Benches of similar dimensions. Ample storage space encourages good housekeeping. Write for literature. STANDARD PRESSED STEEL CO., Jenkintown 14, Pennsylvania.

sps

HALLOWELL SHOP EQUIPMENT DIVISION JENKINTOWN PENNSYLVANIA

If you write maker identify as IEN - 10613

NEW ZENITH* MAGNETIC SOLENOID CONTACTORS

★ SOLENOID OPERATED
★ FINE SILVER CONTACTS
★ SIMPLIFIED WIRING

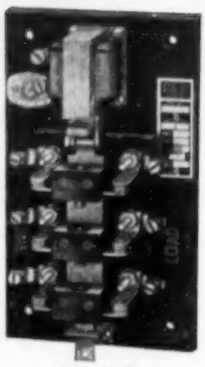
This ZENITH Contactor is built to withstand the severe service demanded by loads based on Type-C lamps.

It is designed on the straight-line principle, with the solenoid being connected directly to the contact bar.

The advantage of this method of construction is its easy access to any part for quick inspection or service, without disturbing other parts.

Models: Size 1 - 25 amps. Size 2 - 50 amps.

Either size can be supplied in any number of poles.



TYPE SC 33

SEND FOR FREE CATALOG

This big, illustrated catalog contains all the newest items in automatic control equipment made by Zenith. Write now for your copy!

ZENITH ELECTRIC CO.
146 W. WALTON ST., CHICAGO 10, ILLINOIS

If you write maker identify as IEN - 10614

ELI LILLY AND COMPANY use UNISTRUT METAL FRAMING

in countless plant maintenance jobs!

STOCKED AS SERVICE STORES ITEM, TO:

★ Rack Conduit, Cable and Mechanical Piping
★ Frame Power Load Centers
★ Mount Switches, Meters and Panelboards
★ Support Fluorescent Fixtures
★ Construct Assembly Tables and Conveyor Supports

Typical Lilly use of UNISTRUT metal framing is for stanchions and trapeze supports to carry high voltage and metering conduits in a tunnel installation.

Write for FREE 78-page Construction Catalog

UNISTRUT PRODUCTS COMPANY
1013 W. Washington Blvd.
Chicago 7, Illinois Dept. D9

Please send Free 78-page Construction Catalog No. 700

Name.....
Company.....
Address.....
City.....Zone.....State.....

If you write maker identify as IEN - 10616

TESTING . . Abrasive wear machine for cylindrical work between centers

Source: TABER INSTRUMENT CORP.
107 Goundry St., North Tonawanda, N. Y.

Includes refacing attachment

Work measuring 8 to 36 in. in length and ½ to 6 in. in diameter can be mounted between centers in this new Model W-3081 cylindrical abrasion tester. It rates the wear resistance of protective finishes such as black oxidizing, electroplating, extruded plastic, enamel.

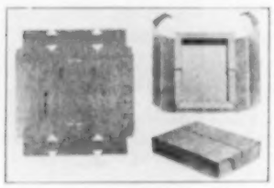
The test is performed by placing the work between two driving centers and in contact with the abrading head. The head can be set lengthwise along the work. Pressure is applied against the surface by a floating dead weight load which compensates for minor inaccuracies from a true circle. Width of the wear track is normally 1 in. but the face of the abrading wheel can be faced to wear a track ½ in. in width.

Abrasion resistance is counted as the number of wear cycles that a surface will withstand before the protective finish is penetrated. End point is determined by an indicator solution. Cycles are totaled by an electric counter.

If you write maker identify as IEN - 10617

PACKAGING . . Die cut box to cushion products for shipping

Source: SHELTON MFG. CO.
589-93 Ferry St., Newark 5, N. J.



Requires no seal

Double face corrugated board is die cut so it can be folded around a product as shown in the illustration of this new box. The completed fold places a cushioning ring around four sides and encloses it top and bottom. It can be securely closed or easily opened by postal authorities as required for third class mailing. The company is prepared to design the box for any product that is to be mailed in quantity. Corner card and postmaster information are printed on the outside. The unit was initially developed to ship books.

Identify as IEN - 10618

Falling objects cannot land on the operator of a Yak or a Yank Mercury lift truck when it is equipped with a new steel-framed mesh canopy that rides above the operator's position. It stands free from battery compartment back of the operator so there is no interference in battery maintenance. It is 95 in. above the floor in working position. The company can supply one or any number for the two types of truck.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10619

SPEED PRODUCTION

. . . by putting your clamping burden on

KNU-VISE AIR CLAMPS

MODELS AVAILABLE TO GIVE YOU PRESSURES RANGING FROM 80 LBS. UP TO 2875 LBS.

Can bring you efficiency in several ways:

1 — in single installations where operator's fatigue is a factor or where the location of hand-operated clamps would be impractical.

2 — in multiple installation controlled by a single valve.

3 — in multiple installations with sequence valves operating certain clamps at predetermined intervals.

Sales offices in principal cities. Teletype DE 49

Send for new folder giving further information.

KNU-VISE PRODUCTS LAPEER MFG. CO.
3060 DAVISON ROAD • LAPEER, MICHIGAN

WESTERN DIVISION: 422 MAGNOLIA STREET • GLENDALE, CALIFORNIA

If you write maker identify as IEN - 10620

Check These 10 Advantages in TRENT Oil Heater Elements

1 Underwriters' approved.
2 Rated 3 to 16 K. W.
3 Voltage 115-550—3 Phase.
4 Low Watt Density.
5 Minimum Carbonization.
6 Low Maintenance.
7 Designed for 300 lb. pressure.
8 Heavy duty terminals and terminal box.
9 Extra heavy flange or screw thread.
10 Temperature range up to 600° F.

ABOVE: HAUCK ELECTRIC OIL PREHEATER, Hauck Mfg. Co., Brooklyn, N. Y. Heat source is TRENT Fin Tube Heating Element.

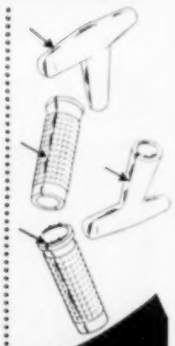
LEFT: TRENT Fin Tube Heating Element for flange instead of threaded connection. Also made in plain tube and blade styles.

TRENT INC
Electrically Heated Industrial Equipment
247 LEVERINGTON AVE PHILA 27 PA.

If you write maker identify as IEN - 10621

SAND-O-FLEX beats...

belts, buffs, barrels, backstands and blasting for deburring and finishing aluminum tool handles!



Note how brushes force the abrasive cloth into the corner thereby eliminating tedious hand methods.

THESE cast-aluminum tool handles used on torque wrenches, manufactured by J-O Manufacturing Company, South Gate, California, come out of the mold with a sharp flash and seam around the entire part. Some of the burrs are inaccessible and an extended search was made for a flexible tool that would get in and around the contours without "flatting" or marring the handles. Sand-O-Flex is the only tool that gets down in and around all surfaces. It not only removes the burrs and seam in one pass, but prepares the surface for anodizing.

Sand-O-Flex does so many jobs so much better. If you have a finishing problem on contoured parts, you need Sand-O-Flex. Simply fasten a Sand-O-Flex to any rotating shaft (motor, lathe, electric drill, etc.)—no special equipment necessary. As it spins, brushes cushion the abrasive cloth and mold it to intricate work shapes. A central magazine holds the abrasive cartridge and as it wears, it is fed out by hand in a matter of seconds. Abrasives are furnished in many grits for a wide variety of finishes on all types of metals. With heavier grit fillers, Sand-O-Flex is also ideal for removing tool marks, rough-grind marks, and deburring complex steel surfaces. Four models—from small portable applications to heavy-duty production line uses. For free catalog and prices, write to

MERIT PRODUCTS, INC.
4023 Irving Place, Culver City, California

If you write maker identify as IEN - 10623

SELF-LUBRICATING Powdered Bronze Bearings To Your Designs

DUCTILOY powdered-bronze bearings are serving by the millions in sweepers, refrigerators, washing machines, portable electric and pneumatic tools, medium and light industrial equipment.

Use is indicated wherever it is desired to provide bearings that will require virtually no lubrication or service attention — bearings accurate within thousandths, ready to drop or press into position — bearings for radial load or thrust or both, to intricate design if necessary.

May we quote to your prints
There's no obligation

NATIONAL MOLDED PRODUCTS, INC.
Manufacturers of
SINTRLOY - DUCTILOY - TUBELOY BEARINGS
1945 Mill Street St. Mary's, Pa.

If you write maker identify as IEN - 10624

"Lightnin" Mixers
MIXCO® Engineered

ILLUSTRATED
Lightnin Gear Drive Portable Mixer

WIDEST CHOICE OF STANDARD STOCK MIXERS—Electric and air-driven types, direct or gear drive. Sizes ⅙ to 3 HP. Ready to operate. Full selection of motors and materials. Replacement parts always in stock.

What a Difference the *Right* Agitation Can Make!

On job after job, LIGHTNIN Mixers have cut process time *in half*—improved product uniformity—slashed manpower costs—simply by giving the correct agitation for the job. You can standardize on LIGHTNIN—because there is a LIGHTNIN Mixer for every fluid agitation job! Get the facts . . . write today for illustrated Catalog B-75.

WHAT TO LOOK FOR IN A PORTABLE MIXER

BALL-BEARING MOTORS . . . Semi-enclosed, totally enclosed, or explosion-proof, as required. One of the reasons for LIGHTNIN's exceptionally long operating life.

BALL AND SOCKET CLAMP permits various mixing actions—pulling vortex, heavy rolling action, or LIGHTNIN two-way action. Mixer can be swung out of tank for cleaning.

SEALED OUTBOARD BEARINGS take the load of mixing shaft off the motor bearings. Permanently sealed to prevent leakage and contamination of the mix.

PROCESS ADAPTED AGITATION • TOP-ENTERING • LIGHTNIN MIXCO • SIDE-ENTERING • DOWN-ENTERING

SEND FOR THESE HELPFUL CATALOGS
Lightnin Portable Mixers . . . Cat. B-75
Lightnin Propeller Mixers for Closed Tanks . . . . . Cat. B-78
Lightnin Side Entering Mixers for Tanks up to 5 Million Gals. . . . . Cat. B-76
Lightnin Turbine and Paddle Agitators; 1 to 200 HP, Cat. B-102

MIXING EQUIPMENT CO., Inc.
(MIXCO) 124 Mt. Read Boulevard, Rochester 11, N. Y.
In Canada: William & J. G. Greey, Ltd., Toronto 1
Representatives in Principal Cities

If you write maker identify as IEN - 10626

TESTING . . Electronic instrument checks moisture in sealed containers

Source: AMERICAN INSTRUMENT CO.
8032-48 Georgia Ave., Silver Spring, Md.

No training needed

Hydrotector is a recently improved moisture indicator that is employed with individual small sensing elements permanently installed inside filled containers at the time they are filled and sealed. The instrument connects electrically through a fitting on the exterior of the package to the sensing element on the inside. It reads per cent of moisture to make certain that no leakage has occurred through the moisture barrier after shipping or a period of storage.

If you write maker identify as IEN - 10627

FASTENING . . Floating anchor nut with lock collar for aircraft

Source: ELASTIC STOP NUT CORP.
2328-32 Vauxhall Road, Union, N. J.

List is $6.54 per hundred

Two types known as 22A41-82 and 22A41-02 have been added to the company's ESNA line of fastenings in which a non-metallic collar acts as the means to lock against loosening. The new unit provides floating adjustment to assist in assembly and occupies the same space as the previously developed non-floating unit, also shown in the illustration. Base length is 0.969 inch. Height is 0.281 inch.

If you write maker identify as IEN - 10628

LADDER . . Welded tubular steel, steel steps, folds or opens to use

Source: EASTERN ENGINEERING & EQUIPMENT CO.
1058-62 Broad St., Room 412-D, Newark 2, N. J.

Six heights are 4 to 12 ft. for this new tubular steel light weight step ladder. It features structural strength and only a little greater weight than a non-ferrous ladder of equal strength. Rubber feet are standard equipment. The rear legs hinge back to provide four-point support on a floor or can be brought forward as shown in the illustration to lean against a wall.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10629

Freedom to Sell is Vital to us All

Eight decades ago 70% of all gainful workers in the U.S.A. toiled in agriculture. Today farms and factories together account for less than 40%.

The rest serve chiefly in distribution, including selling, advertising and sales promotion. Their efforts are essential to move American products.

Without sales a business fails and jobs vanish. Salesmen sometimes demand and get from employers better products, or lower prices, or both. Thus, competitive selling greatly increases our prosperity.

Where selling is inefficient, restricted or eliminated there is far less wealth, happiness and security. Competition is a great American Freedom. Preserve it for Progress For All Our People.

THIS REPORT ON PROGRESS-FOR-PEOPLE is published by this magazine in cooperation with National Business Publications, Inc., as a public service.

THE COMPETITIVE SYSTEM DELIVERS THE MOST TO THE GREATEST NUMBER OF PEOPLE

If you write maker identify as IEN - 10630

WRITE OFF COSTLY ERRORS

USE BRADY "WRITE-ON-LABELS"

A remarkable new development in write-on labels, combining printed forms and write-on space. Eliminate errors, simplify quality control, speed production through the use of these Brady self-sticking, Write-on Labels, made to your requirements. They're mounted on handy dispenser cards which serve as writing boards; easily written on with pencil, pen, rubber stamp or even typewriter, and then applied to any surface. Hundreds of money-saving uses, including inspection, identifying circuits and instruments otherwise hard-to-mark.

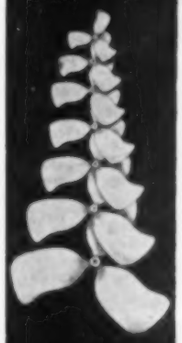
Made of self-adhesive, sturdy cloth backing, pre-cut to exact size, shape, color and printing desired. Send for samples and complete information on stock and special labels.

MANUFACTURERS OF SELF STICKING PRODUCTS
W. H. BRADY COMPANY
1675 E. SPRING STREET - CHIPPEWA FALLS, WIS.

If you write maker identify as IEN - 10631

Kloppenborg (one piece) Cast Aluminum

EXHAUST and CIRCULATING FAN BLADES



INDUSTRIAL USE

Where air is to be moved — Kloppenborg one-piece high grade cast aluminum alloy fan blades are proving exceptionally efficient. Kloppenborg Fan Blades are purchased by many of America's leading industrial plants.

EIGHT SIZES

Kloppenborg Fan Blades are made in 8 sizes — from 12" to 36" — and are rated at 1750 RPM to delivery approximately from 1255 to 14,900 CFM. They are bored to most shaft specifications and are carefully balanced. YOUR maintenance men can install them easily.

Send today for a catalog on blades and all other parts needed for fans.

KLOPPENBORG ALUMINUM FOUNDRY
Established 1938
DAVENPORT 5, IOWA

If you write maker identify as IEN - 10632

. . . they're
SELF-LOCKING
in any position on a threaded member

FLEXLOC LOCKNUT DIVISION
SPS
JENKINTOWN PENNSYLVANIA

FLEXLOC Locknuts immediately lock in any position on a bolt or stud the moment you stop turning them; they do not have to be seated to lock. And FLEXLOC Locknuts stay locked, no matter how severe the vibration; are one-piece, all metal; can be used repeatedly without losing their locking torque to any appreciable extent! Samples available upon request. Let us know what size you need. STANDARD PRESSED STEEL CO., Jenkintown 14, Pa.

If you write maker identify as IEN - 10633

Read This . . . to Reduce This

Cuno MICRO-KLEAN Filter cuts cartridge replacement in *half* and is *guaranteed* to remove 100% of all solids larger than specified* plus a large percentage down to 1 micron. Free bulletin tells how to get positive micronic cleaning of a wide range of industrial fluids . . . at a new low cost for cartridges and maintenance.

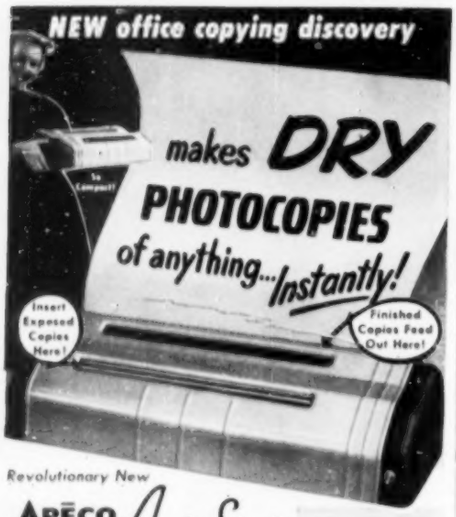
Write for Bulletin MK-035. Cuno Engineering Corporation, Dept. 6910 M, South Vine Street, Meriden, Connecticut.

*10, 25 or 50 microns.

CUNO *Fluid Conditioning* Removes More Sizes of Solids from More Types of Fluids

If you write maker identify as IEN - 10634

NEW office copying discovery



Revolutionary New

APECO Auto-Stat

New, low-cost machine makes photo-exact copies direct from original letters, forms, bids, contracts, invoices, reports, blueprints.

Here is the first major advancement in office copying in the last 15 years. Can save you up to 80% on your copying jobs! Eliminate costly retyping, hand copying, checking or sending outside for expensive copying service. The Auto-Stat is the first low-cost machine that makes error-proof, legally accepted, black-and-white photo-like copies—WITHOUT SLOW, MESSY DEVELOPING, FIXING, WASHING OR DRYING. It's fast—only 2 simple steps instead of 12 required by old methods. Makes prints instantly from any originals up to 11 x 17 inches—whether printed on one or two sides. Requires no dark room—and any inexperienced clerk can operate it!

So low cost! So compact!

Fits on the corner of a desk or table and is priced within the budget of even the smallest firm. It's portable—just plug in any outlet—and the Auto-Stat is ready for instant operation.

So Easy!

COPIES PEEL APART!

Copies feed out automatically . . . then you just peel copies apart. That's all there is to it. An Electric! Fully automatic!

- No developing
- No washing
- No fixing
- No drying
- No trays
- No dark room

HAVE YOU READ THIS NEW BOOK? IT'S FREE!

Here is a really informative, worthwhile, factual report on an important new copying development. New 12-page booklet pictures and tells complete Auto-Stat story—shows how you can use this revolutionary new photo-copy method.

MAIL TODAY!

American Photocopy Equipment Co. Dept. IEN-92
2839 North Clark St., Chicago 14, Ill.
Please Rush me—without obligation—FREE copy of your new book on Auto-Stat—with full details on this new photocopy method.

Name .....
Firm .....
Address .....
City ..... Zone ..... State .....

Developed and Manufactured in the U. S. A. by AMERICAN PHOTOCOPY EQUIPMENT COMPANY

If you write maker identify as IEN - 10636

STORING . . Steel locker made in single and double tier sizes

Source: STEEL SERVICE MFG. CO.
322-26 N. 7th St., Steubenville, Ohio

Pilfer proof

Jet-Lok trade names corner locking construction that permits sliding the front, back and sides of this new locker into a secure assembly that requires no bolts. The bottom shelf and top are then secured by bolts and the legs, with their adjustable feet, are applied at the bottom. Clothes rods slip into double pronged coat hooks and require no bolting. A lock completes the assembly.

The door and frame are made of 16 gage cold rolled steel. The locking channel is 19 gage and the other parts are 24 gage. Stock sizes are 12, 15 and 18 in. front to back and side to side by 36, 60 and 72 in. in height. The 36-in. height is intended for double tier assembly. Any of the units can be specified single or double row. Steel Pride trade names the new line of sizes named.

If you write maker identify as IEN - 10637

CUTTING . . Abrasive machine, 16 in. disc for operation wet or dry

Source: STONE MACHINERY CO.
601 Fayette St., Manlius, N. Y.

Motor drives direct

New design of the company's Model-M75 heavy duty cut-off machine, previously described IEN 7700-50, employs a 7½-hp. motor in place of the previous 5-hp. unit to drive the 16-in. abrasive disc. The disc is mounted on the motor head and the two are carried on a swinging arm counterbalanced by springs at the back of the housing. Spindle speed is 2,500 rpm. Operation is on 220/440-volt 60-cycle three phase ac.

The machine can be specified with a self-centering air operated work vise and with a work stop adjustable to 24 in. in greatest work piece length. Removable splash guards apply when the machine is operated wet. Capacity is to 2½-in. solids or 4-in. pipe and structurals.

Identify as IEN - 10638

Light weight fiber board sheets enclose the sides, ends and top of a new shipping case, developed by Gaylord Container Corp., to ship a two-ton engine lathe. The lathe mounts on a timber skid to which it is secured so no other part of the complete container is required to carry any load. The net result is a saving of 50 to 75 per cent in cost as compared to a complete wood crate, 55 per cent in weight. Two men can assemble it in 30 minutes.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10639

ELECTRIC OVEN • Only $79.50

F.O.B. Chicago

GRIEVE-HENDRY PORTABLE ELECTRIC OVEN

FOR PRODUCTION OR LABORATORY USE

Model CR-1
10 cu. ft. capacity—36" wide x 23" deep x 24" high. Removable shelves and drip pan.

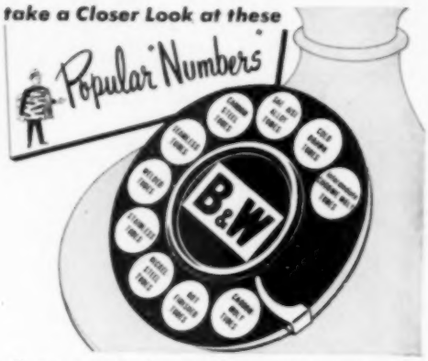
Portable. Adjustable temperature control to 225°F. Fan driven forced air circulation. Uniform temperature throughout. Plugs into any 110V wall outlet—no special wiring required. Can be used in a group or bank.

Standard Models with Temperature Ranges to 1000° F. Available. Prompt Quotations on Ovens Built to Your Specifications. Write for literature.

GRIEVE-HENDRY CO., INC.
1654 W. HADDON ST. • CHICAGO 22, ILL.

If you write maker identify as IEN - 10640

take a Closer Look at these Popular Numbers



Keep your vendor files up-to-date by writing for Bulletin TA-1559 to match B&W tubing facts to your requirements. To save your time, and to keep paper work at a minimum, call in Mr. Tubes—your B&W Tube Representative—to give you and your company engineers the benefit of the extensive technical service on pressure and mechanical tubing he represents.

TA-1692G

THE BABCOCK & WILCOX COMPANY
TUBULAR PRODUCTS DIVISION
General Offices & Plants
Beaver Falls, Pa.—Seamless Tubing; Welded Stainless Steel Tubing
Alliance, Ohio—Welded Carbon Steel Tubing

B&W SEAMLESS and WELDED TUBES

If you write maker identify as IEN - 10641

Chem-Board Tote Boxes HELP BUILD AIRCRAFT . . .

Many plants building the planes needed to make the nation strong keep materials, parts and sub-assemblies flowing to production lines in thousands of Convoy Chem-Board Tote Boxes. The nesting boxes illustrated are stored in minimum space while awaiting new loads.

Chem-Board is made of corrugated fibre-board, chemically impregnated by Convoy's exclusive process. It is flint hard and rock strong. It is not weakened by moisture. It is impervious to machine oils. Convoy Tote Boxes cost and weigh 50% to 60% less than steel.

The lightness, toughness and economy of Chem-Board Tote Boxes are unmatched. Tell us the style you use . . . we'll send a free production sample from the next run for you to test. As a guide for present and future availability, our current production capacity is reserved for the unprecedented demands from old customers and "DO" orders. Orders rated DO-MRO are acceptable. Write today.

Standard and Custom-made Nesting—Stacking—Vertical CHEM-BOARD TOTE BOXES

CONVOY, INC.
P. O. Station B, Box 216-1
CANTON 6, OHIO

If you write maker identify as IEN - 10642

— SALE —

NEW FAN BLOWERS

IMMEDIATE DELIVERY

In perfect condition, never installed, #11 Buffalo Limit Load Type LL Fans (single inlet, single width, CCW rotation, upblast discharge, rated at 60,000 cfm at ⅝" static pressure) with 20 hp. Reliance Chemical Type Motors (440 V., 5-hp., TEFC, including strip heaters and base rails).

Other New Electrical and Chemical Equipment from $1½ Million Plant Cancellation:

PUMPS • CRANES • VALVES • MOTORS
BUILDING MATERIALS • BOILER PLANT
Complete POWER & ELECTRICAL EQUIPMENT & RECTIFYING UNITS

FOR INSPECTION or DETAILS, Phone Mr. R. W. Shell, (Ashtabula, Ohio), 24-186, Xtn 45 or Write Foster-Hamilton, Box 441, Ashtabula, O.

FOSTER-HAMILTON
P. O. Box 1647
CINCINNATI, O. • PITTSBURGH, PA. • ASHTABULA, O.

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Cut Costs with MEAD MIDGET Air-Clamps!

Horizontal and Vertical!

Pneumatic Cylinders

Both models deliver 80 lbs. pressure on a line pressure of 100 lbs. They'll save countless man-hours in assembly operations involving welding, riveting, bolting, etc. Advantages over mechanical clamps: 1. Any number can be operated by single master valves. 2. Easily installed in cramped corners. 3. Equal ram pressure at any stroke point.

Send for new Mead AIR POWER Catalog, describing our line of Air Clamps, Air Vises, Air Presses, Work Feeders, Valves, Controls, etc.

MEAD SPECIALTIES COMPANY

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it's a better way to LIFT

TYPICAL APPLICATIONS

Hoisting heavy metal pieces into and off machine tool beds, stacking stock and finished parts, loading and unloading trucks, etc.

THE Dings Magna-Lift Magnet is ideal for miscellaneous metal lifting work in the shop. Hang it on a jib crane, hang it on any hoist. It's HANDY. It will handle any shape, no matter how irregular. It saves back-straining and man hours.

As the illustration shows, the Magna-Lift is tremendously powerful for its size. Ruggedly built, this magnet will work for years with little maintenance. Yet it is low cost. Size: 8" x 14" x 3". GET FULL DETAILS TODAY.

DINGS MAGNETIC SEPARATOR COMPANY

4755 W. Electric Ave., Milwaukee 46, Wis.

—DINGS MAGNETS—

Non-Electric and Electric Pulleys

Non-Electric Drums

Non-Electric Plates

"I WISH I HAD-"

An IEN reader is waiting for an answer to each item in this column.

This column concentrates upon reader requests for information on sources of supply for products or services or technical advice which we ourselves cannot supply, advises you of new patent-protected products for your possible manufacture, and available surplus of specialized products.

It is published to invite your suggestions and comments, which are forwarded immediately to the originator, just as we will be happy to publish similar problems for you.

SURPLUS . . "I wish we had a buyer for 35 Boston Gear Ratiomotors No. MR 5840S for 43.1 rpm. output. These motors are new. They have become surplus with us due to a change in our design. In stock in Columbus, Ohio." **IEN W-90**

SURPLUS . . "I wish we had a buyer for 1,500 one-quart cans of a liquid known as Rifle Bore Cleaner to remove rust, loosen bolts, clean typewriters. In Milwaukee." **IEN W-91**

SURPLUS . . "I wish we had a buyer who can use good quality 1.1-oz. orange and white nylon offcuts, suitable for ties and linings. The material originates as surplus in manufacture of parachutes. It is in storage in Kentucky." **IEN W-92**

SURPLUS . . "I wish I had a buyer for all or a part of 200 buffing wheels measuring 8 in. in diameter by 3 in. in width with a 1 in. steel bushing bored for ¾ in. diameter shaft. The stock is in Syracuse, N. Y." **IEN W-93**

SURPLUS . . "I wish we had a buyer for 12 Mason Neilan No. 95-D float chamber type liquid level controllers for 125 lb. service. Bodies are cast iron with threaded 2-in. pipe connections. They are in storage in Pascagoula, Miss." **IEN W-94**

SURPLUS . . "I wish I had a buyer for all or part of 10,000 lb. of magnesium sheet. Dimensions are 0.102 and 0.156 in. in thickness and 35 by 99 in. in width and length. The alloy is No. FSIH24. Material is in Alhambra, Calif." **IEN W-95**

SURPLUS . . "I wish I had a buyer for 11,000 chipboard boxes, unprinted with lock ends measuring 6⅞ by 2¾ by 2 in., and for 12,000 cellophane bags measuring 2⅝ by 4¼ in., together with a Bostitch "E" foot operated production type stapler, used. In storage near Los Angeles." **IEN W-96**

SURPLUS . . "I wish I had a buyer for all or part of a surplus stock of 70,000 Torrington No. BH-108AA needle type bearings, heavy series. All are new in their original wood boxes. Size is ⅝-in. bore, ⅞-in. outside diameter, ½-in. width. A sample is available. West Bend, Wis." **IEN W-97**

SURPLUS . . "I wish we had a buyer for approximately 20,000 aluminum plates 3 in. in diameter by 0.0625 in. in thickness of No. AL2 aluminum. The stock is in Cleveland, Ohio. We will mail samples upon request." **IEN W-98**

(Please turn to page 128)

If you write maker identify as IEN - 10646

says V. Holstum, Plant Supt. of Dix-Sax Co., Minneapolis, Minn., makers of dust control systems, where this "Bear" Dy-Namic Balancing Machine is being used to balance giant fan wheels.

SIMPLIFIED OPERATION of "Bear" Dy-Namic Balancing Machines is so fast, so economical, so easy to learn that manufacturers, maintenance shops and others are employing this revolutionary method with top-production results. No complicated manipulations to learn! Average shop man can learn to balance in a few hours! Get full details by sending for **FREE DY-NAMIC BALANCING MANUAL** . . . tells how you can eliminate noise and vibration, reduce wear and improve performance of rotating parts, *quickly, accurately,* and *economically.* Write: Bear Mfg. Co., Dept. I-5, Rock Island, Ill.

"BEAR"

STATIC AND *DY-NAMIC BALANCING* MACHINES

balance rotating parts weighing from 4 oz. to 8 tons

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HOW TO PICK THE RIGHT PUMP FOR YOUR PURPOSE

THIS?...

THIS?...

THIS?...

or THIS?

Tuthill now makes it easy for you to select the pump best-suited to the service you require. In one simple, letterhead-size table, the Tuthill Pump Guide gives you the details you need—types of service, pump models for each, capacities, pressures, speeds, packing, mountings, and exclusive features. Saves time, work and trouble.

Write for this PUMP GUIDE today!

TUTHILL PUMP COMPANY

930 East 95th Street, Chicago 19, Illinois

If you write maker identify as IEN - 10648

Champ Hot Water Team!

JOHNSON

Heater plus steam

It's one of industry's favorite ways to heat water or process liquids of all sorts. Just hook up the Johnson "Instant" Heater to your high pressure steam lines; no reducers needed. Efficient design provides maximum contact between the water and steam-heated surfaces, transfers more heat more rapidly. Whatever your liquid heating job, get the Johnson money-savings facts.

Sizes for all needs; write for literature.

The Johnson Corporation

846 Wood St., Three Rivers, Mich.

If you write maker identify as IEN - 10649

FIX THAT ROOF!!

BEFORE IT FIXES YOU

Use STONHARD ROOF RESURFACERS For Positive Protection

Fall rains cause leaks without warning and repairs "tomorrow" aren't soon enough. A drum of STONHARD ROOF RESURFACER *on hand* will safeguard you against damage from *sudden leaks!* No heating, no mixing of ingredients; used right from the container, STONHARD Liquid or Plastic ROOF RESURFACERS can be applied by brush or trowel and the job is done. Check on your roof today and send for our folder "Not a Drop Can Penetrate."

STONHARD COMPANY

Building Maintenance Materials Since 1922

102 Stonhard Building, 1306 Spring Garden St., Philadelphia 23, Pa.

Please send me your ROOF RESURFACER folder: 102/9/52

Name .....

Company .....

Address .....

City ..... Zone ..... State .....

If you write maker identify as IEN - 10650

Foremost in the Magnetic Field
Stearns MAGNETIC INC.
626 SOUTH 28TH STREET • MILWAUKEE 46, WISCONSIN

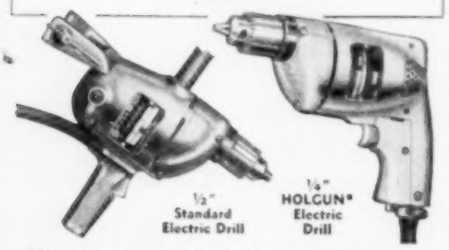
If you write maker identify as IEN - 10651

"The last girl got promoted when the boss asked her to call the best conveyor company. She telephoned Alvey-Ferguson, REDWOOD 7000, Cincinnati."

For Engineered Conveying Systems
THE ALVEY-FERGUSON COMPANY
Since 1907
343 Disney Street CINCINNATI 9, OHIO
Representatives in Principal Cities

If you write maker identify as IEN - 10652

DRILLING PROBLEM?
Switch to
BLACK & DECKER
POWER



FOR drills to fit your needs, it pays to see your nearby Black & Decker Distributor *first!* You get an unmatched choice of Drill models — capacities from ¼" to 1¼" — choice of handle arrangement — choice of speed, power and price in most capacities. And you get powerful Black & Decker-built motors, full ball-bearing construction, extra-tough parts, husky housings, perfect balance. Write for free catalog to: The Black & Decker Mfg. Co., 615 Pennsylvania Ave., Towson 4, Md.

LEADING DISTRIBUTORS EVERYWHERE SELL
Black & Decker
PORTABLE ELECTRIC TOOLS
*Trade Mark Reg. U. S. Pat. Off.

"I WISH I HAD"

(Continued from page 127)

ACID HANDLING . . "I wish we had a source from which we can purchase equipment to pump hot 20 per cent hydrochloride acid in batch quantities 50 gal. or less. We have in mind the acid egg type of pump in which the acid is moved with compressed air from a closed container. However we are open to suggestions for other safe handling needs. We are located in Tennessee." **IEN W-82**

BRIQUETTING . . "I wish I had contact with a firm that can sell us a used coal briquetting machine with capacity from 50 to 100 ton per day. Mexico." **IEN W-83**

CAM CUTTING . . "I wish we had contact with a source from which we can purchase a used Brown & Sharpe cam cutting attachment. We are located in Bayonne, N. J." **IEN W-84**

ENGINEER . . "I wish I had contact with a firm needing the services of an industrial engineer with 12 years of experience in design, production engineering, material handling, purchasing and sales. I am at present in Wisconsin but am prepared to move as required." **IEN W-85**

MANUFACTURING . . "I wish I had a product to develop, manufacture and market, one that would require a small amount of capital and that would employ my experience in product design, development manufacturing and selling. I am located in Connecticut." **IEN W-86**

NEW PRODUCT . . "I wish I had a manufacturer to take over production and sale of my patented attachment for a spirit level to apply it as an inclinometer. The attachment consists of a bracket that secures to the level and an adjustable foot that can be set to raise one end of the level a predetermined amount from the surface being checked. The patent number is 2520700." **IEN W-87**

NEW PRODUCT . . "I wish I had contact with a manufacturer to take over production and sale as a mail order or premium item of my patented Tine-Bar dispenser. It is made up of a screw cap and sliding bar carrying a series of prongs that engage and plug holes in the cap until pushed into clearing position when the holes are opened as in a salt shaker. Releasing the slide bar permits the tines to close the holes again and at the same time cleans them so they cannot become clogged. Descriptive sheet is available." **IEN W-88**

WINDING . . "I wish we had a machine with which to wind X-ray tube filaments of small diameter wire in small diameter variable pitch coils." **IEN W-89**

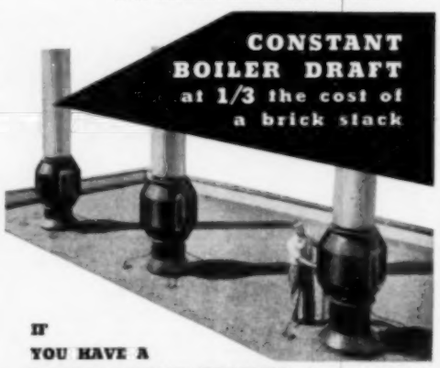
(Please turn to page 127)

PLEASE WATCH FOR YOURS

Certain copies of this publication for the next few months will carry a post card on the front page. It is intended for your use to make sure you still want to remain on our mailing list. Please watch for the one with your name on it.

OK or correct your name and address as they appear on the card. Please also check the questions asked. They are simple, self-explanatory, essential to our circulation audit.

If you write maker identify as IEN - 10653



IF YOU HAVE A **DIFFICULT STACK PROBLEM** take a tip from Viroqua Co-op Creamery, Viroqua, Wisconsin. Three DeBothezat Induced Draft Bifurcator Fans maintain constant boiler draft regardless of weather conditions. According to manager Sylvan Dregne, these fans were installed for approximately ⅓ the cost of a suitable brick stack.

How much can YOU save by installing Induced Draft Bifurcator Fans? Ask your DeBothezat representative or write for details.

DeBothezat Fans
Division of American Machine and Metals, Inc.
EAST MOLINE, ILLINOIS

If you write maker identify as IEN - 10654

SIMPLER FLOW MEASUREMENT
in the palm of your hand

NEW! MERCURY-LESS!
FOXBORO
DIFFERENTIAL PRESSURE CELL

Simplify troublesome flow problems . . . especially where corrosion is a factor or the use of mercury is objectionable. This unique flow measuring device — the Foxboro d/p Cell — reduces installation and operating costs, combines measurement and transmission in one simple, compact unit.

OUTSTANDING FEATURES
- *Uses no mercury*
- *Steel or Stainless Steel Construction*
- *Zero Displacement*
- *Weighs only 20 pounds*
- *Easily calibrated*
- *Ranges: 25" to 800" H_2O*

WRITE FOR BULLETIN 420. The Foxboro Company, 429 Neponset Avenue, Foxboro, Mass., U.S.A.

FOXBORO Reg. U. S. Pat. Off. ACCURATE FLOW MEASUREMENT

If you write maker identify as IEN - 10655

Defense Contracts Call for Hinges?
Call on STANLEY...

You just specify the hinge you want—Stanley does the rest, from first sketch to finished product.

Stanley gives you the advantage of expert designers and production engineers—complete research and tool-making facilities—the particular plating and finish best suited to your needs.

As the world's largest producer of hinges, Stanley is geared for efficient production to meet your D. O. deadlines. Write for full information—not only on special hinges, but drawings and stampings as well—now!

PRESSED METAL DIVISION
The Stanley Works New Britain, Conn.
New York • Chicago • Detroit • Seattle
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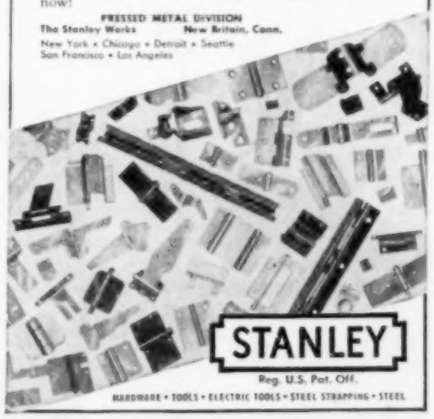

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NEW FLOORS
In 24 Hours

Hard Mastic
HEAVY DUTY • DUSTPROOF • WATERPROOF
FIRE-RESISTANT • RESTFUL • QUIET
SLIPROOF • SANITARY

Install "PERMAFLEX" any thickness required over the old or new Floors, Walks or Drives. . . . Bonds perfectly—never comes loose, 3000 lbs. pressure per square inch, will not rot. . . . Outwears any other known flooring.

For interior or exterior use. . . . Floors installed on Friday night and Saturday are ready for use Monday. . . No chipping. No dust. . . . No production delays. . . . No need to move machinery . . . finish right up to it.

IF DESIRED, OUR CONTRACT DEPARTMENT WILL INSTALL "PERMAFLEX" FLOORS FOR YOU UP TO 30,000 SQUARE FEET PER DAY.

More than 500 leading industrial plants use "PERMAFLEX" . . . including U. S. Steel, General Motors, Chrysler, Remington Arms, General Electric, Western Electric, Westinghouse, Beechnut Packing and leading railroads. Never a failure in more than 1000 installations.

Test 100 square feet and be convinced. Write for literature and trial offer.

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INSTALL COMPLETE 15c per square foot

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